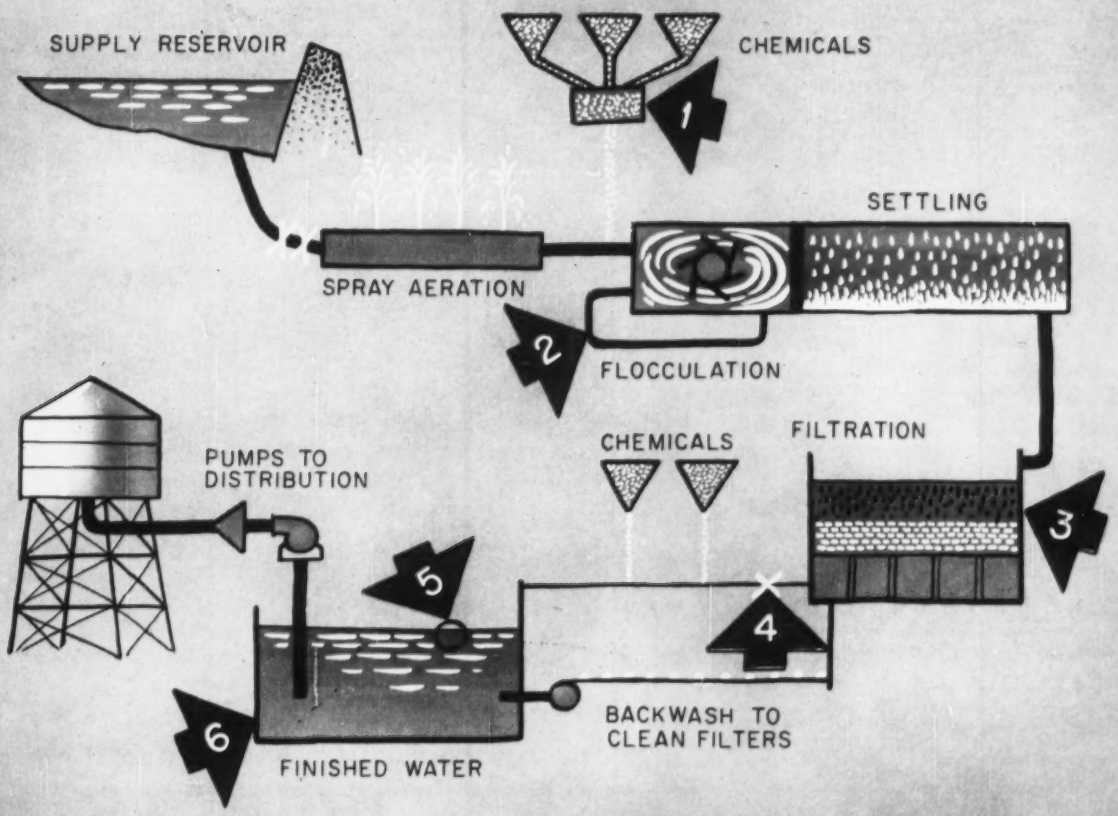
ENGINEERING NEWS-RECORD



Water plant that's different – six ways p. 32

A McGRAW-HILL PUBLICATION

E B POWER GS N
UNIVERSITY MICROFILMS IN
313 N 1 ST
ANN ARBOR MICH

NORTH . . . SOUTH . . . EAST . . . WEST

MR. HOWARD F. SIEVERS
ASSOCIATED SAND & GRAVEL CO.
EVERETT, WASHINGTON

SIMPLE

NO BOTTLENECKS

MR. MILTON HENDRICKSON
RASON ASPHALT, INC.
CEDARHURST, NEW YORK

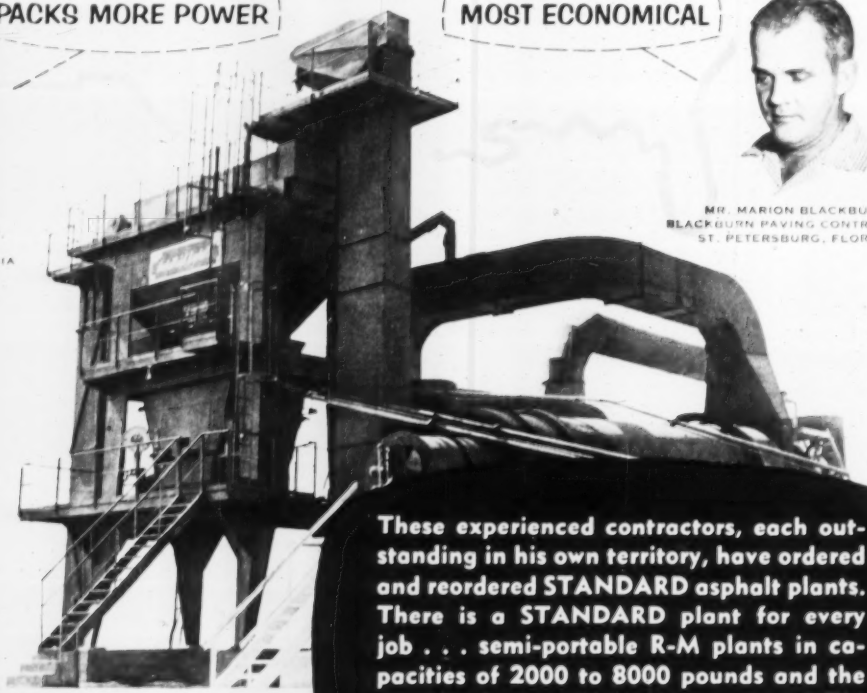
STANDARD ASPHALT PLANTS DO THE JOB *BETTER!*

PACKS MORE POWER

MOST ECONOMICAL

MR. E. J. WOODWARD, JR.
INDUSTRIAL ASPHALT
BEVERLY HILLS, CALIFORNIA

MR. MARION BLACKBURN
BLACKBURN PAVING CONTRACTORS
ST. PETERSBURG, FLORIDA



These experienced contractors, each outstanding in his own territory, have ordered and reordered STANDARD asphalt plants. There is a STANDARD plant for every job . . . semi-portable R-M plants in capacities of 2000 to 8000 pounds and the completely portable trailer mounted TM plants in half-ton, three-quarter-ton and one-ton capacities.

STANDARD *built to do a better job!*

Model ***R-M***

ASPHALT PLANTS

STANDARD STEEL CORPORATION

General Offices & Plant, 5091 Boyle Avenue, Los Angeles 58, California

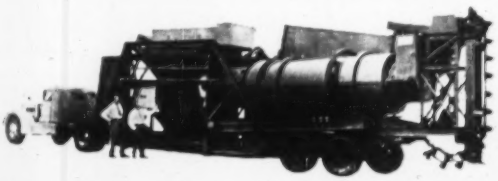
Midwest Offices & Plant **LEADER IRON WORKS** Decatur 91, Illinois

(Division of Standard Steel Corporation)

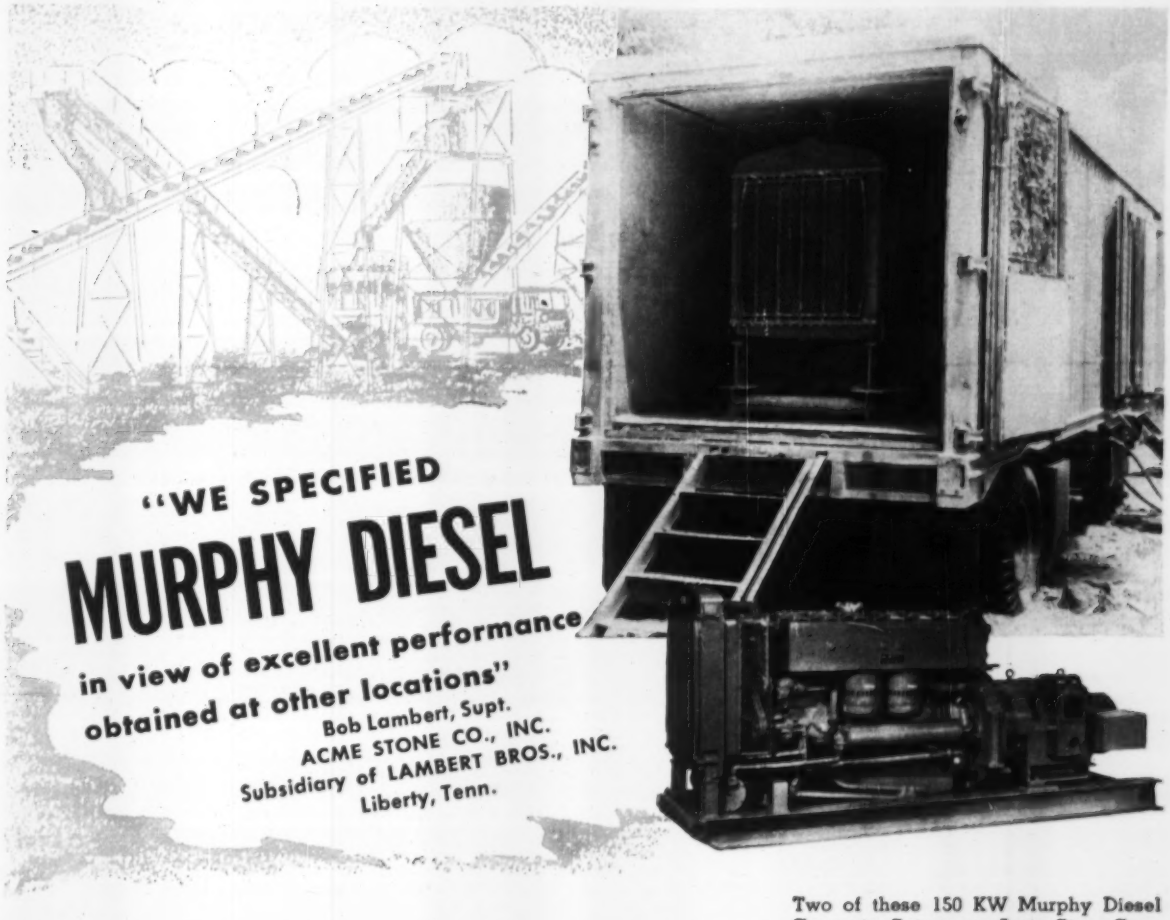
TODAY — write for complete story — and the address of a Standard plant located near you — see for yourself why STANDARD does the job BETTER!

Attention Contractors!

The New *STANDARD* Portable T. M. Plant offers top production. A *complete* self-contained batch type Asphalt Plant . . . on wheels. One man operates! Has exclusive "SELF-LIFT" erecting device. RUGGED – ECONOMICAL – SIMPLE. Mixes up to 60 to 80 tons per hour!



PARTS WAREHOUSES IN LOS ANGELES AND DECATUR, ILLINOIS



"WE SPECIFIED

MURPHY DIESEL

in view of excellent performance obtained at other locations"

Bob Lambert, Supt.
ACME STONE CO., INC.
Subsidiary of LAMBERT BROS., INC.
Liberty, Tenn.

Two of these 150 KW Murphy Diesel Generator Sets power Acme Stone Company's entire plant, except the rolls. Operating 10 hours a day, the plant averages 2000 tons of sized road stone for relocation of State Highway 57.

In selecting power for profitable operations, Acme Stone Co. follows the lead of its parent company, Lambert Bros., Inc. Operating extensively in Tennessee and Ohio, Lambert Bros. *specifies Murphy* for generator or auxiliary power for crushing plants.

It will pay you to follow the lead of successful operators like Acme and Lambert. Ask your Murphy Diesel Dealer to show you how Murphy Diesel's economy of operation and dependability in heavy-duty service helps keep profits high and costs low.

Wherever your job is located, there's a dependable Murphy Diesel Dealer nearby. You can count on him for prompt, expert maintenance and parts service.

380N

MURPHY DIESEL

HEAVY-DUTY POWER for Construction

Murphy Diesel engines and power units are available in sizes from 96 to 264 H.P. with engine speeds of 1200 and 1400 rpm. "Packaged" generating units are available with capacities ranging from 64 to 165 K.W.

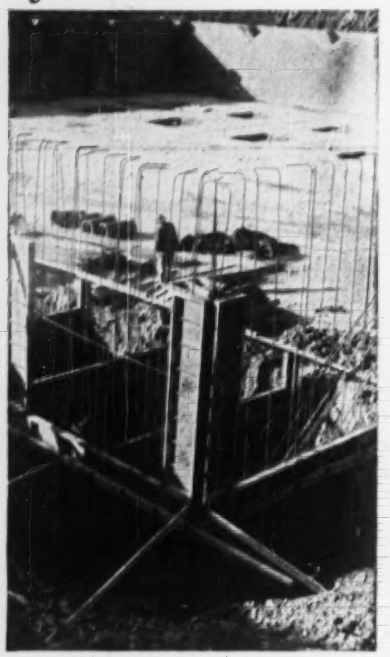
MURPHY DIESEL COMPANY

5321 W. Burnham St., Milwaukee, Wisconsin

SALES . . . PARTS . . . SERVICE

Throughout the Nation

Symons FIELD REPORT...



Contractor Saves 40% with Symons Forms . . .

7,500 square feet of Symons Standard Forms were used in the new 2 million gallon capacity pumping station at Melrose Park, Illinois. 2,000 cubic yards of concrete were used on the job and the concrete contractor, Louis Macro Company, Melrose Park, reported a 40 per cent saving through the use of Symons Forms. Walls for the job were completed in three pours.

Symons engineering service can help you realize substantial savings in forming. With your plans, our engineers will prepare a complete form layout, bill of materials, and make recommendations for the most efficient and cost saving method of forming.

Our field service representatives are sales engineers, ready and able to advise you on form erection, pouring and stripping methods that will help you save time, labor and materials. You can call on them to assist you on any forming problems.

Symons Forms can be rented with purchase option. Symons Clamp & Mfg. Co., 4265 Diversey Avenue, Dept. K-7, Chicago 39, Illinois.

Sam Carniglia Company, Melrose Park, Illinois
General Contractor.

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FORMS—CLAMPS—SHORES
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ENGINEERING NEWS-RECORD

EIGHTY-THIRD YEAR OF PUBLICATION

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SMOOTH HANDLING ALL THE WAY
—on CRAWLERS
—on RUBBER

Remember that an inch can mean a lot to a pin setter high up on the steel. Jerks and grabs mean delays that add costs!

You have never been on a smooth working crane until you've been on a Northwest. The Northwest "Feather-Touch" Clutch Control brings power operation to the main drum clutches and at the same time preserves the *feel of the load* for the operator. Northwest Swing Clutches are Uniform Pressure Swing Clutches that give even pressure over the entire area of the clutch. This means smooth swing and perfect control of the machine and load. Smoother boom handling is augmented by the wide selection of Northwest boom hoist equipment—the standard Worm Boom Hoist, the Northwest High-Speed Boom Hoist, (independent of all other operations with power controlled lowering). The third drum that permits 3 load lines with either of the above boom hoists—Here you can get just the right equipment for handling any combination of problems.

These are just a few of the things that make the Northwest a better crane. A Northwest Man will be glad to give you the rest of the story.

NORTHWEST ENGINEERING COMPANY
1502 Field Building, 135 South LaSalle Street, Chicago 3, Illinois

Things that make NORTHWEST A BETTER CRANE
35 TON TRUCK CRANE
25 TON TRUCK CRANE
THE GREATEST COMBINATION OF PROVED ADVANTAGES EVER BUILT INTO A SHOVEL, CRANE, DRAGLINE OR PULLSHOVEL
NORTHWEST

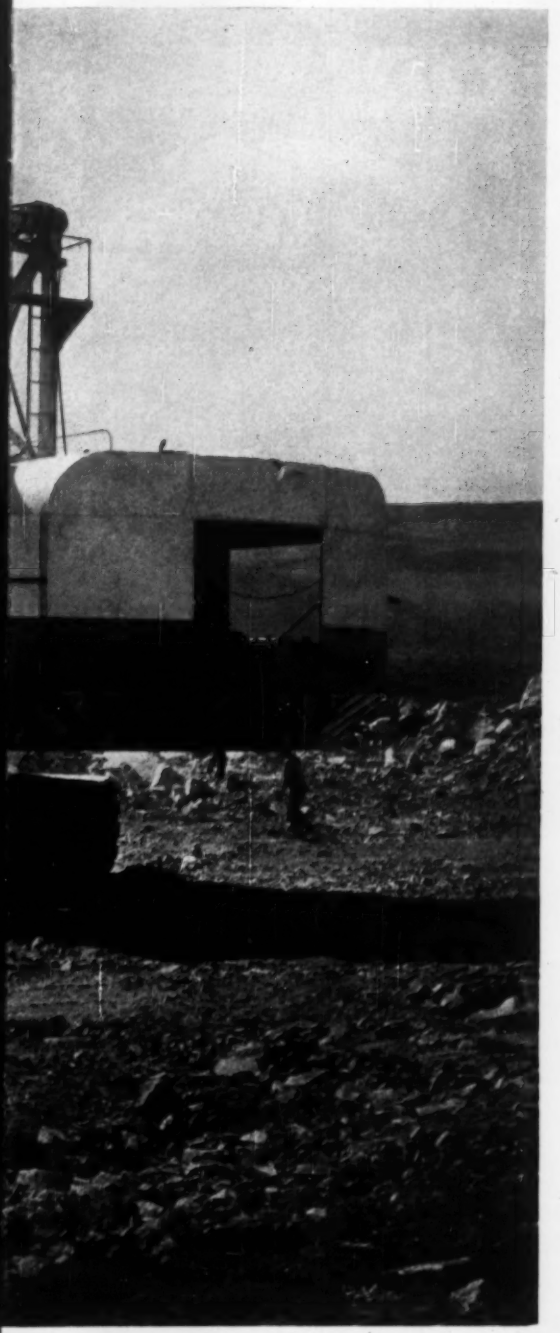
Keeps

TEXACO SIMPLIFIED LUBRICATION PLAN
Whatever the project, you can handle *all* major lubrication with *no more than six* Texaco Products. A real time- and money-saver—helps you avoid lubrication errors, keeps jobs on schedule. Full details from your Texaco Lubrication Engineer.

TEXACO

TEXACO

Equipment on the job... maintenance costs low



THAT'S THE REPORT wherever *Texaco Marfak* is used. *Marfak's* unique "sealing-in" action gives bearings lasting protection against wear and rust. Heavy loads and rough terrain won't jar or squeeze it out. With *Marfak*, equipment performance is always dependable, maintenance costs are low.

In wheel bearings, *Texaco Marfak Heavy Duty* seals out mud and moisture for thousands of extra miles—extends bearing life—assures safer braking. And no seasonal change is required.

If you prefer a multi-purpose lubricant, *Texaco Marfak Heavy Duty Special 2* is the answer. This new lithium-base lubricant handles chassis, wheel bearing, water pump and other grease lubrication. It pumps easily at low temperatures, always lubricates effectively, resists water washing and stands up in the toughest service.

MORE THAN 650 MILLION POUNDS OF TEXACO MARFAK HAVE BEEN SOLD

And don't forget: Texaco Universal Gear Lubricant EP for smoother-working transmissions and differentials—*Texaco Track Roll Lubricant* to fully protect and prolong the life of crawler mechanisms.

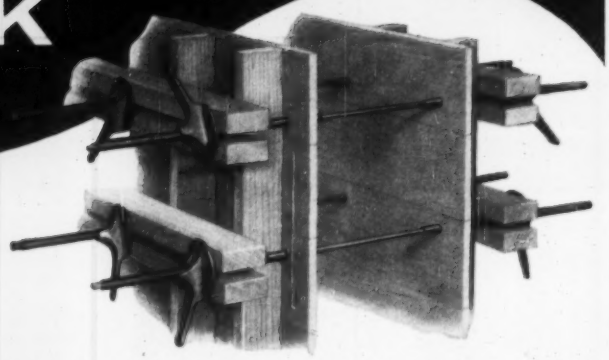
Let a Texaco Lubrication Engineer help you boost efficiency, cut maintenance costs. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

Lubricants and Fuels

FOR ALL CONTRACTORS' EQUIPMENT

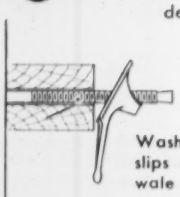
When job conditions call for this type of Heavy-Duty Tie . . .

use SUPERIOR TILT LOCK CLAMPS

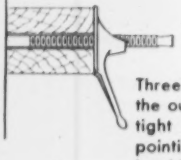


with SPECIAL Safety-Type Handle Washers

The malleable Handle Washer combines handle, washer and wrench—Designed for absolute safety; cannot fall off threads when load drops off or when handle is hit accidentally.



Washer, in tilted position quickly slips over stud rod threads to wale and is seated.



Three full turns on the threads of the outside rod bring it flush and tight against the wale. When pointing upward, the handle may be hit accidentally or pressure released during pouring. This may cause the handle to turn 180°, but the safety feature of 3 complete turns makes it impossible for the clamp to fall off the thread.

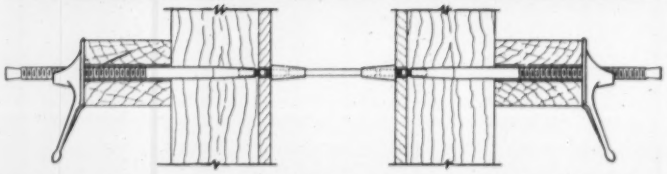
The "safety in use" of Superior's Handle Washers for Tilt Lock Clamps is shown at the left. The Tilt Lock Outside (Stud) Rods have outstanding features, too. The Outside Rod has ⅞″ threads, five to the inch, rolled on a ¾″ high carbon rod. This compares with the ¾″ thread cut on a ¾″ rod usually supplied. Cold rolled threads are tougher, and therefore more resistant to damage, and their contour greatly reduces the clogging of concrete and facilitates cleaning.

The Tilt Lock Outside Rod has a heavy cold forged rectangular end section that is ¾″ wide and ½″ thick, to which the Handle Washer is applied as a removal wrench. This forged section is practically indestructible, never becomes rounded after numerable reuses as does a milled end. Therefore, it is never necessary to use a Stillson.

Superior Tilt Lock Clamps are supplied with Outside Rods 16″ long and 20″ long, for both ⅜″ and ½″ inside tie rods. Extensions are available where field conditions require Outside Rods longer than 20″.

Superior supplies high tensile inside rods with rolled threads. Form layouts and estimates are prepared from plans without charge or obligation.

with Cone Nuts for Spreader Action



Where it is desirable to use Tilt Locks with Superior Cone Nuts for spreader action or other reasons, Tilt Lock Rods are adapted for use with Cone Nuts as illustrated above.

Tilt Lock Clamp Assemblies may be rented with a ninety day option to purchase.

SUPERIOR CONCRETE ACCESSORIES, INC.

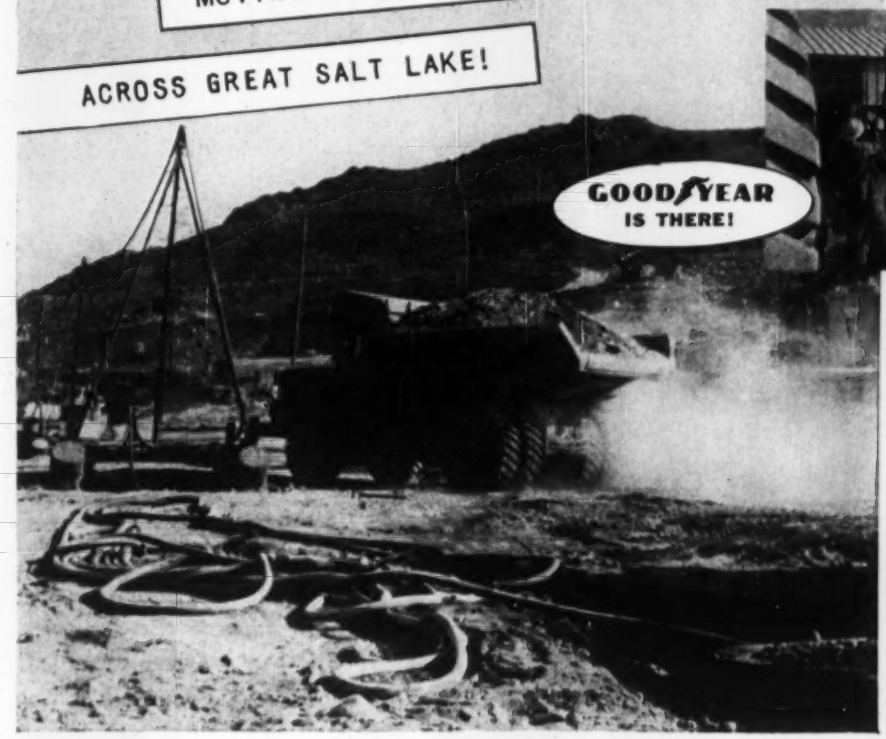
9301 King St., Franklin Park, Ill. (A Suburb of Chicago)

New York Office
1775 Broadway, New York 19, N. Y.

Pacific Coast Plant
2100 Williams St., San Leandro, Calif.

MOVING 47 MILLION YARDS TO BUILD DRY-LAND RAILROAD

ACROSS GREAT SALT LAKE!



TIRE MAINTENANCE A MUST — on-the-job experts, on 24-hour call, help keep the fleet rolling. Strategically located, well-equipped, well-manned service like this cuts down time to a minimum wherever Goodyear helps jobs roll.

HERE, MORRISON-KNUDSEN has 600 men and a $15,000,000 array of tools at work "converting" salt water into road-bed. End dump trucks—bottom dump trucks—plus barges, dredges, conveyor belts and electric shovels—are high-balling a causeway 13 miles long, 180′ to 480′ base-width and as much as 70′ above lake-bottom footing. At left is one of these trucks, picking up riprap from borrow. Tires are Hard Rock Lug by Goodyear.

Now—end up to 80% of tire down time:

Specify Goodyear 3-T Nylon Cord

Tubeless!

NOW IN 3-T NYLON CORD—
TUBELESS OR TUBE-TYPE!

HARD ROCK LUG

ROAD LUG

ALL-WEATHER EARTHMOVER

HARD ROCK RIB

SURE-GRIP LUG

Look for this nearby Goodyear dealer sign for better tire values—better tire care.

Goodyear TUBELESS tires end tube and flap troubles—major cause of truck and earth-mover tire down time. Tube replacement and many-item inventories also end.

You get a bonus in man-hours saved—for repairs and remounting are simpler. Long tire-life is surer, too—for small injuries are easy to spot before extensive damage.

And of course you get TRIPLE-TOUGH 3-T NYLON CORD—that great tire *saver* found only in Goodyear.

Just be sure you specify *Goodyear 3-T Nylon Cord* tubeless tires—and see the *Goodyear* dealer about economical change-over of present equipment. Goodyear, Truck Tire Dept., Akron 16, Ohio.

Buy and Specify

GOODYEAR

MORE TONS ARE HAULED ON GOODYEAR TRUCK TIRES THAN ON ANY OTHER KIND

All-Weather, Road Lug, Sure-Grip—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

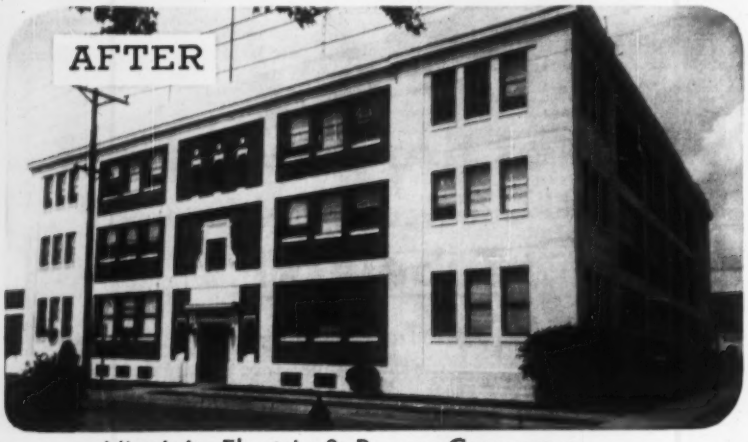
THORITE and THOROSEAL furnish office building with *That New Look* plus all-weather protection.

BEFORE

Severe weathering had deteriorated sections of cornices, sills, lintels and ledges. Cracks permitted water penetration, causing damage to interior of building.

All cracks were opened with hammer and chisel, spalled areas cut and cleaned, then patched with THORITE, followed by two brush coat applications of Pearl Gray THOROSEAL.

Brick was left uncoated to develop pleasing contrast. See Circulars No. 16 and 20.



Virginia Electric & Power Company
Richmond, Virginia

THORITE — ***NONSHRINK PATCH*** 20 minute set patching mortar

THOROSEAL — ***MASONRY SEALER*** seals masonry walls against water and beautifies surface

"How to do it" GET OUR 16 PAGE BROCHURE

STANDARD DRY WALL PRODUCTS, INC.
NEW EAGLE, PENNA. CENTERVILLE, IND.

. . . Reader Comment

Consulting Fee Questioned

Sirs—There must be a misprint or a misinterpretation of terms in the article on the second deck for the George Washington Bridge (ENR Aug. 29, p. 79).

The estimated cost of constructing the second deck was given as $20 million. The design contract was awarded at a figure of $150,000. This is a design fee of ¾ of 1%.

If the design contract is for preliminary drawings only, then a fee of $600,000 is more in line with usual practice. In that much of the work was done when the bridge was originally designed a feed of 3% is understandable. However, a design fee of ¾ of 1% is hardly defensible.

R. B. Cutler
Cutler Designs
Boston, Mass.

Editor's Note—Design and plans for the second deck of the bridge will be done by the design department of the Port of New York Authority. The PNYA has engaged Mr. Ammann's firm as design consultant. As original designer of the bridge, Mr. Ammann will check the plans to see that they are in harmony with the original design.

Do It Yourself

Sir—Since our company manufactures products for the home craftsman, we, of course, read all articles which bear the titled of "do it yourself." Your editorial (ENR Aug. 15, p. 196) was, of course, most interesting.

We would readily agree that sometimes "do it yourself" is overdone. We feel, however, that there is considerable evidence that it is overdone in the press more often than by the home craftsman. The more we learn about our chosen field, the more convinced we are that the basic desire for a man to accomplish something with his two hands which is visible, physical, and lasting, is the same trait which existed in the pioneers who built our country. We have observed that there is little demand for home workshop type power tools in other parts of the world where

Engineering News-Record welcomes expression of opinions from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance. Letters should be addressed Editor, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

Expert bond service *on the spot*

Need a bond? A call to your Travelers agent will put a bond specialist on the spot in no time.

He's an expert on local requirements. He knows just what you need and what you don't need. And he can get it for you without wasting time.

You'll find he's familiar with construction bond problems—understands *your* problems, too. And most important of all, he represents The Travelers—a company with a nation-wide reputation for getting bonds to responsible contractors FAST.

The Travelers complete service for contractors also includes:

Workmen's Compensation and Public Liability insurance with effective safety engineering to reduce accidents.

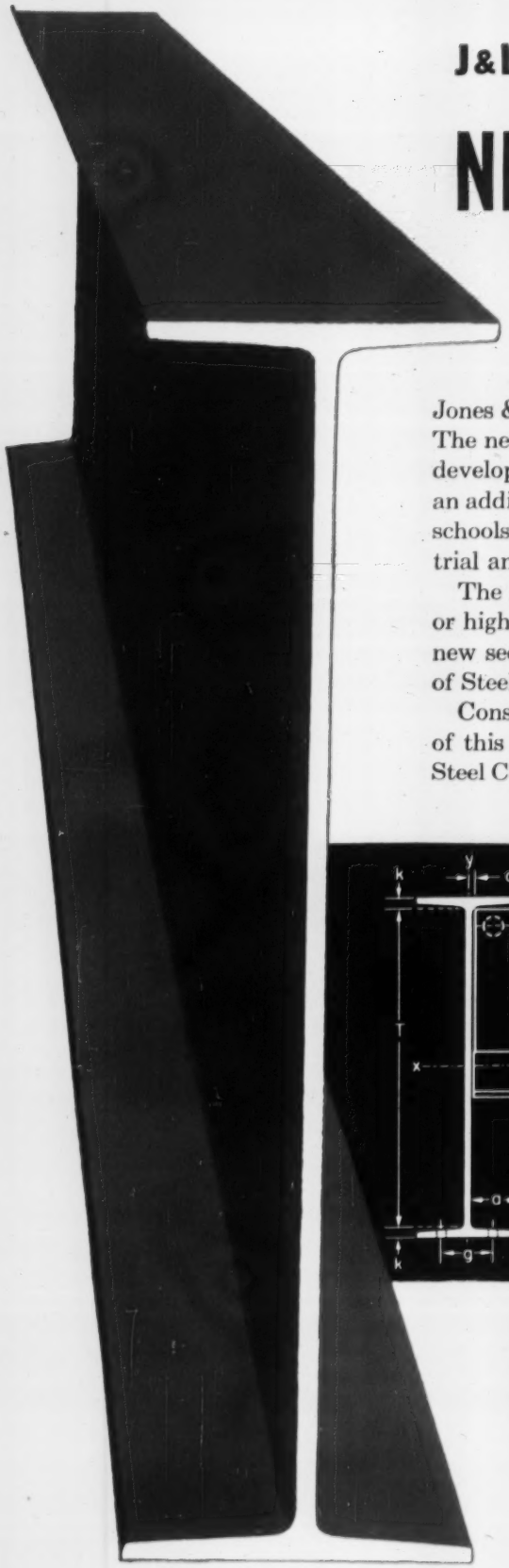
Equipment Floaters and *Builders' Risk* insurance backed by a claim organization that can give you prompt attention anywhere.

YOU WILL BE WELL SERVED BY

THE TRAVELERS

INSURANCE COMPANIES, HARTFORD 15, CONNECTICUT

All forms of business and personal insurance including
Life • Accident • Group • Fire • Marine • Automobile • Casualty • Bonds



J&L ANNOUNCES

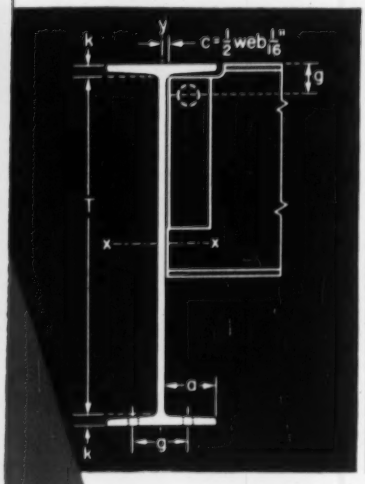
NEW 14″ LIGHT BEAM

with 4″ flange

Jones & Laughlin is now producing a 14″, 17.2 lb. light beam. The new light weight hot rolled section, with a 4″ flange, was developed by J&L structural engineers to meet the need for an additional light weight section in the design of apartments, schools, hospitals, shopping centers, parking garages, industrial and commercial buildings.

The new 14″ light beam can be furnished in regular carbon or high tensile grades. For properties and design data on this new section, we suggest you refer to the American Institute of Steel Construction Manual.

Consult your J&L district sales office concerning availability of this new light beam, or write direct to Jones & Laughlin Steel Corporation, 3 Gateway Center, Pittsburgh 30, Pa.



Properties for Designing	
Nominal size	14 x 4 in.
Weight per foot	17.2 lb.
Area	5.05 in.²
Depth	14.0 in.
Flange—Width	4.0 in.
Mean thickness	.272 in.
Web thickness	.210 in.
Axis X-X—I	147.3 in.⁴
S	21.0 in.³
r	5.40 in.
Axis Y-Y—I	2.65 in.⁴
S	1.32 in.³
r	.72 in.

Properties for Detailing	
Nominal size	14 x 4 in.
Weight per foot	17.2 lb.
Depth	14 in.
Flange—Width	4 in.
Mean thickness	¼ in.
Web—Thickness	3/16 in.
Half thickness	⅛ in.
Distance—a	1⅛ in.
T	12⅛ in.
k	9/16 in.
g_1	1¼ in.
c	3/16 in.
Max. flange rivet	¼ in.
Usual gage—g	2¼ in.

Jones & Laughlin
STEEL . . . a great name in steel

it is customary to have servants, and where the hourly compensation is menial.

The largest group of customers for home workshop tools is among the skilled and semi-skilled craftsmen. Probably three-quarters of all home workshop tools sold are purchased by this kind of individual. Certainly this man is not a rank amateur, but has found a more profitable use for his post World War II leisure than a cocktail lounge or television set. It also is significant to note that the kind of work done by the typical home craftsman is of better quality than that which he is able to have done professionally. He typically takes far more time to plan and much greater care in executing his project. Furthermore, he does the work with less upset to his household.

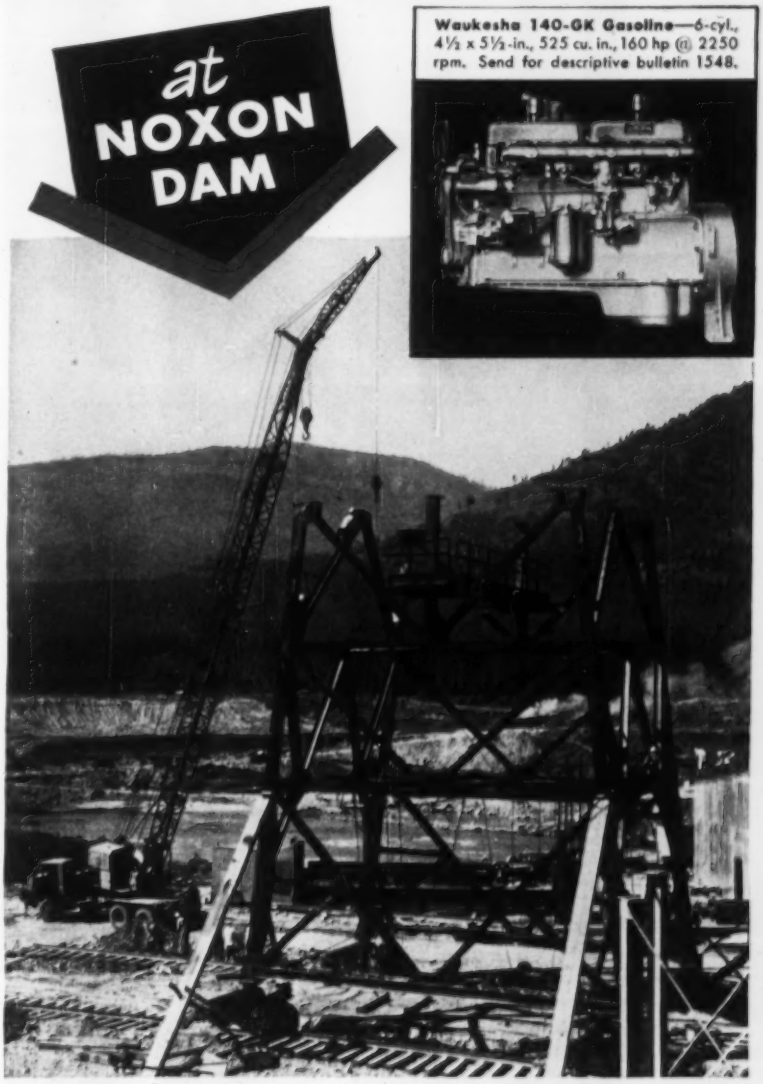
It has, of course, been said in many ways that the individual who earns $3.00 an hour is in no position to pay $6.00 or $7.00 for a specialist to do a home repair or improvement project. It is, in fact, rarely a question of deciding to work more overtime to make more money which can then be used to pay a professional craftsman. We believe that your editorial may be quite appropriate for a very small number of the "do it yourself" home craftsmen, but a very small number. Our ten years in the business of making tools for this market have convinced us that the vast majority of home craftsmen find their home projects a challenge, a continuing satisfaction, and, therefore, a significant source of pleasure.

F. G. Chambers
Vice President
Magna Power Tool Corporation
Berkeley, Calif.

Fair Foundations Good

Sir—The article on the Long Island Expressway in your issue of September 26 contains a rather vivid description of "Flushing Meadows", site of New York World's Fair in 1939, as it existed when the fair was under construction. However, the statement that many of the structures erected on the site "had settled and cracked before the Fair was over in the fall of 1940" may give the impression that insufficient attention was given to the possibility of such settlements in designing and erecting these structures.

The regulations set up by the engineering staff of the Fair for design of foundations of bridges and buildings, either temporary or permanent, which were erected by the Fair itself or by exhibitors or concessionaires, made adequate provision for prevention of settlement. Except for very minor structures,



Waukesha 140-GK Gasoline—6-cyl., 4½ x 5½-in., 525 cu. in., 160 hp @ 2250 rpm. Send for descriptive bulletin 1548.

Morrison-Knudsen own and use Lorain Crane

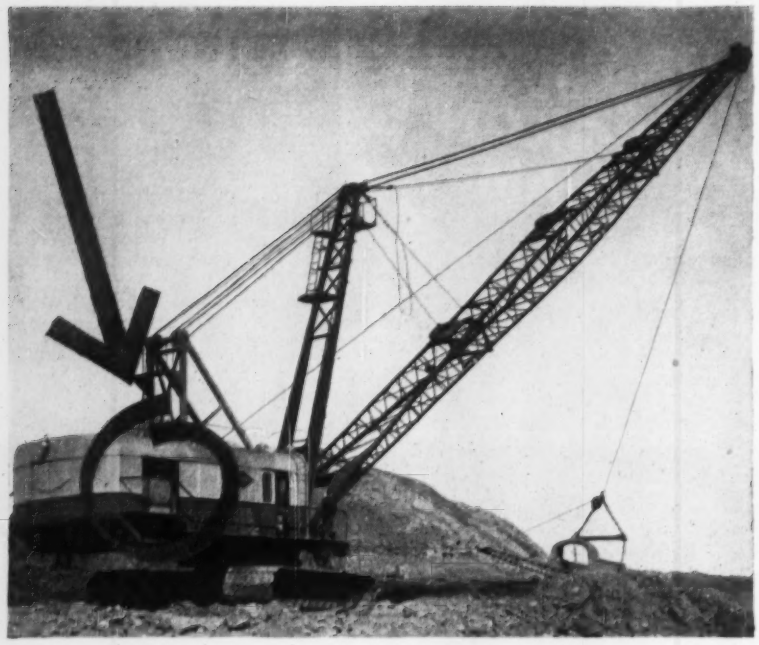
powered by

WAUKESHA

For the Noxon Rapids Hydroelectric Project on Clark Fork River in western Montana—Morrison-Knudsen Co., Inc. of Boise, Idaho are building a concrete and earth fill dam, maximum height 190 ft. and about 5930 ft. long. About the busiest piece of equipment on the job is their Waukesha-powered Lorain MC 505-W mobile crane. After setting up a concrete batch plant, it is shown here setting up a two whirley crane plant. The Lorain's 140-GK Waukesha Engine gives it safe, steady power with ready reserve for heavy handling as well as fast power for speedy mobility.

353

WAUKESHA MOTOR COMPANY, WAUKESHA, WISCONSIN
NEW YORK TULSA LOS ANGELES

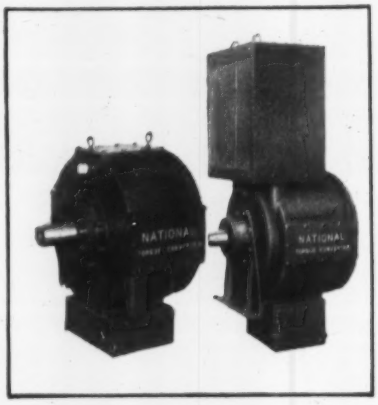


Fauzio Brothers' big Lima Dragline is "Work Conditioned" with a National Torque Converter

A lot of stamina and a lot of capacity are built into this big dragline—but they both have been profitably plussed by a National Torque Converter. With the engine operating at all times within its best speed and efficiency range, the torque converter automatically adapts the power supplied to the load conditions.

For instance—if the bucket hits a boulder and resistance builds up in the dragline, the *speed* of line take-up is automatically reduced, and the *force* of the pull is automatically multiplied. When resistance drops, speed automatically increases and pull automatically declines. Shocks and stresses are absorbed within the converter, operator fatigue is lessened, output is boosted.

These same benefits are helping users of other large equipment, too. If you have any heavy machinery driven by electric or internal combustion prime movers of from 100 to 1000 hp, and if it works under rapidly varying loads and is subjected to severe shock and strain, a National Torque Converter may provide a profitable answer to your problem of getting top output with bottom maintenance cost. *Just write:*



National Torque Converters are manufactured with or without integral cooling systems.

THE NATIONAL SUPPLY COMPANY

INDUSTRIAL PRODUCTS DIVISION

Two Gateway Center, Pittsburgh 22, Pa.

Pace-Setters in the progress of industrial power transmission

practically all foundations were supported on wood piles, most of them 100 feet or more in length. In some buildings, the floor was placed directly on the ground, although the column footings were supported on piles; but in such cases, the resulting settlement of the floor was not unexpected and was not considered a serious drawback.

I do not know of any serious settlement of the superstructure of any important building or bridge on the site during the life of the Fair, except in the case of a bridge over Horace Harding Boulevard. The end span of the trestle approach to this bridge did settle appreciably, although it was supported on piles; otherwise, all important structures on the site stood up very well.

H. Alden Foster
Principal Associate
Parsons, Brinckerhoff, Hall & Macdonald
New York

Editor's Note: Mr. Foster was Chief of Engineering Design throughout most of the period of construction, under the supervision of John P. Hogan, Chief Engineer of the Fair organization.

Intelligent Slobs?

Sir—The article, Engineering Profession Psychoanalyzed (ENR Sept. 19, p. 23) was of definite educational value, in that it afforded the engineer an opportunity "to see himself as **others** see him." Articles of this nature serve to impress upon all engineers that, in the viewpoint of **others,** the engineer is a highly intelligent slob.

Even more enlightening though, was the comment on that issue's editorial page under the heading "And the Engineer of Today": "For if the psychoanalysts are right, and we do not question them, engineers are mostly a highly intelligent group of non-intellectuals. . . ."

Et Tu Brutus?

D. A. Hawkes
Norwalk, Conn.

CALENDAR

Hydraulics Conference and Annual Pacific Northwest Meeting, American Geophysical Union, Washington State College, Pullman, Wash., Oct. 28-31.

Building Officials Conference of America, Inc., central west regional meeting, Chase Hotel, St. Louis, Mo., Oct. 31, Nov. 1-2.

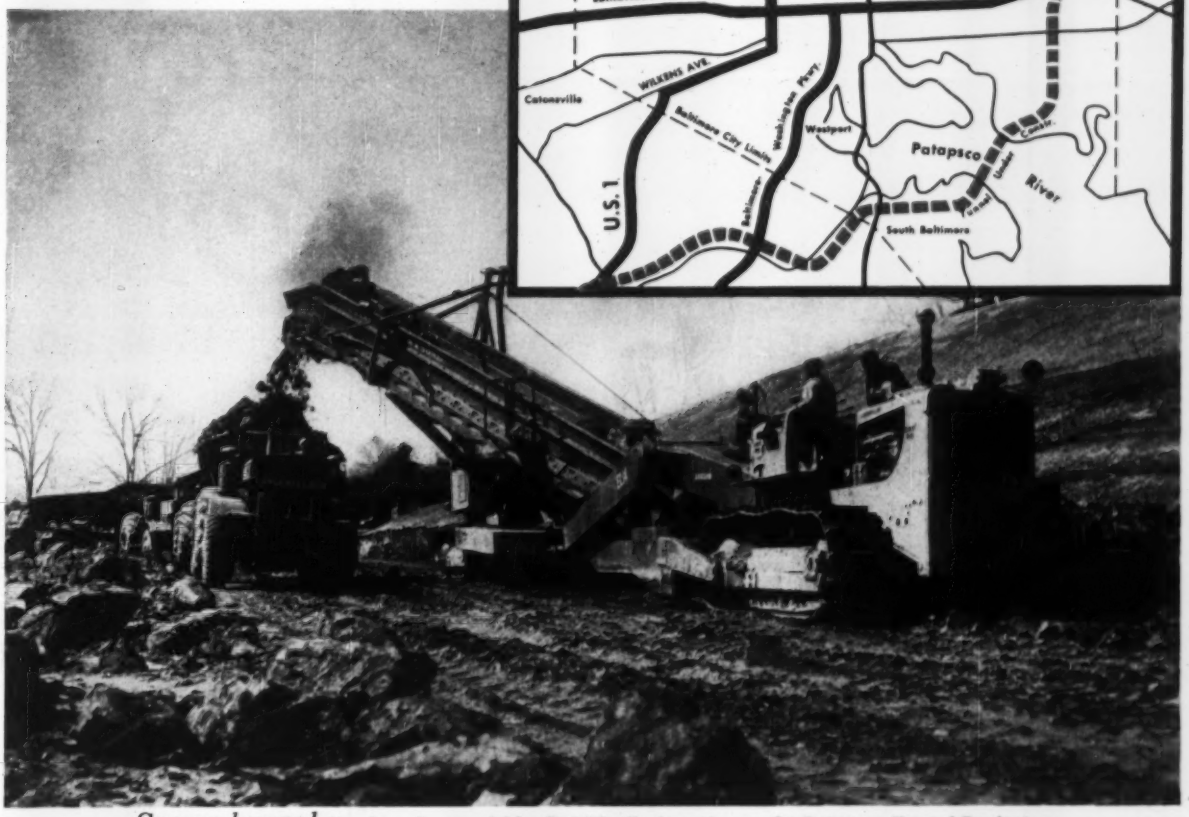
American Concrete Institute, regional meeting, Benjamin Franklin Hotel, Seattle, Wash., Nov. 5-6.

American Society of Civil Engineers, Kansas City Section, regional highway conference, Continental Hotel, Kansas City, Mo., Nov. 7-8.

American Public Health Association, annual meeting, Cleveland, Ohio, Nov. 11-15.

American Standards Association, National Conference on Standards, St. Francis Hotel, San Francisco, Calif., Nov. 13-15.

Major contractor on the approaches for the Patapsco River Tunnel in Baltimore is C. J. Langenfelder & Son, Inc. . . . now building over 15 miles of roads and ramps, including 9.3 miles of 4-lane straightaway.



Super-charged diesel – a Langenfelder D-8 "Cat" – in action on the Patapsco Tunnel Project.

C. J. Langenfelder & Son, Inc., Baltimore,

reports fewer overhauls, lower operating costs with ESTOR D-3

The Patapsco Tunnel Project is a gigantic undertaking. More than 150 pieces of Langenfelder equipment have been working on the approaches – scheduled for completion in 1957.

Because of the need for a top quality "series 3" lubricant in late model equipment, Langenfelder has standardized on Estor D-3 for *all* its diesels. As a result, Langenfelder reports: remarkable engine cleanliness that has made possible *improved engine performance and lower operating costs* due to fewer major overhauls and longer engine life.

On the Patapsco Tunnel Project Langenfelder is using *only* Esso lubricating oils and fuels. Consequently, they are enjoying smoothest possible operation...more power and fewer breakdowns.

More and more contractors are finding out that in any equipment, on any job, under any operating conditions...it pays to specify *ESSO*.

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For further information, write for Seal Coat Specification No. 7.

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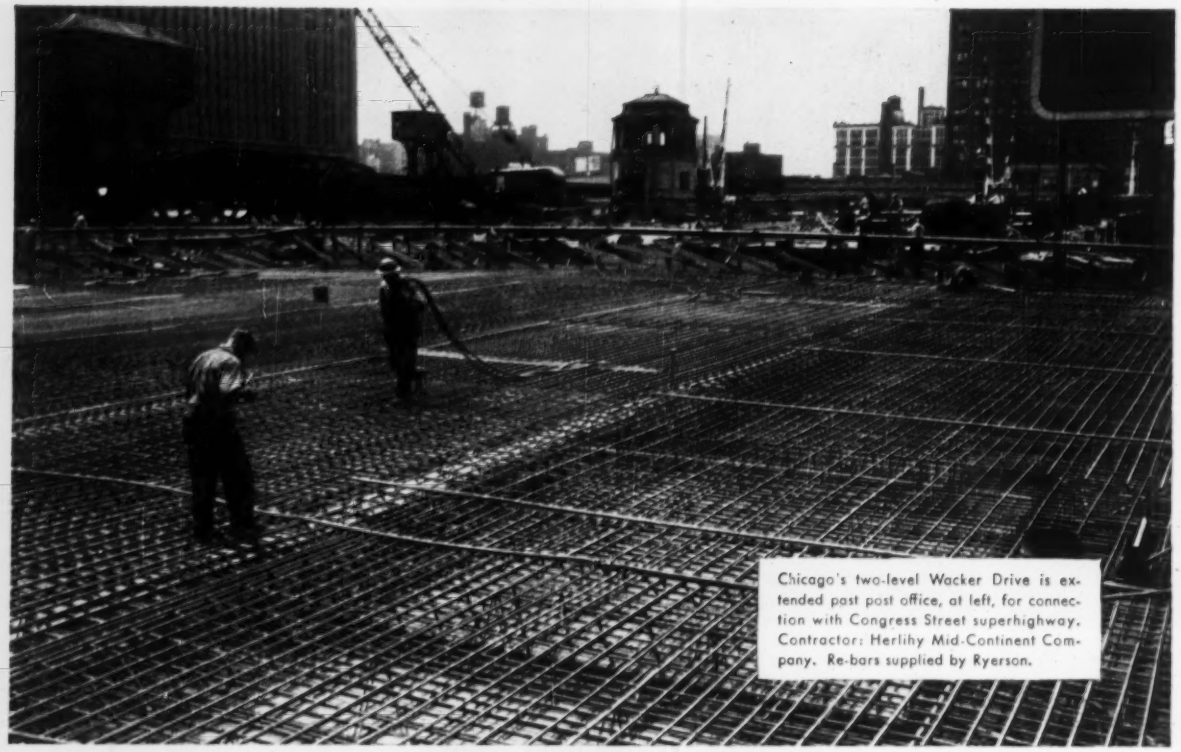

Chicago's two-level Wacker Drive is extended past post office, at left, for connection with Congress Street superhighway. Contractor: Herlihy Mid-Continent Company. Re-bars supplied by Ryerson.

Are you getting this 4-point service on reinforcing bars?

Pictured here is the Ryerson reinforcing products department where large stocks of Hi-Bond type bars are carried. Here the worker is signaling into place a lift of 60 ft. re-bars.

Contractors say there are four reasons why they keep coming back to Ryerson for rebars:

1. Tremendous stocks to supply any job, large or small.
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4. Deliveries always on schedule—to the day or even the hour you specify. Yet never too early, so that steel piles up on the site.

Contact your nearest Ryerson plant for a lump-sum or average-pound quotation on your next job. You'll save time and money, too, by ordering all your other construction steel requirements from Ryerson.

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ENGINEERING NEWS-RECORD

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CONTENTS

NATIONAL AFFAIRS

States Stir Up Colorado Water Fight..... 21
Mackinac Straits Bridge Opens..... 24
Work Starts on Throgs Neck Bridge..... 26
"Saved" Miles Added to U. S. Road System.... 26
Plate Girder Record Set on Connecticut Span... 27
Brick Walls Are Prefab Panels..... 28
Chicago Meetings Put Accent on Safety..... 28

FEATURES

A Water Plant That's Different—Six Ways..... 32
Priest Rapids Progress in Pictures..... 40
Bleeder Plates Reinforce Bridge Deck..... 42

INTERNATIONAL

Montreal Terminal Area to Be Improved..... 44
Ecuador Maps Four Key Highways..... 47

NEW PRODUCTS

New Adhesive Has High Bonding Strength..... 53
Slide Rule Designed for Water Calculations.... 53
Tape Sticks to Itself but Not to Touch..... 53

MEN AND JOBS

Teacher Moves to Top Road Job..... 58
Scott Turner Named for 1957 Hoover Medal... 59
Ohio Water Committee Ready to Operate..... 59
Corps Safety Engineer Gets Morocco Mission... 59
Arthur Ford Named to Head N. Y. Water Board 59
AICE Award of Merit Goes to Donald Quarles.. 59
Frederick Diercks Commands Army Map Service 59
Jenkins Becomes Chairman of U. of Michigan Department 59
Careers 60

BUSINESS AND FINANCE

Lease-Purchase Returns to the Field..... 80
The NAHB After Fifteen Years..... 81

LABOR

Teamsters Are Out But Door Is Open..... 84
New Union Laws in the Making..... 87

Reader Comment... 8 Unit Prices 62
Calendar ..... 12 Materials Prices 64
Washington Observer 19 Construction Reports. 69
Legal ..... 56 Scoreboard 78
Editorials 100

Back issues of ENGINEERING NEWS-RECORD *are generally available for the previous six months. Price 50¢ each copy except Annual Cost Issue. Semi-annual indexes will be sent on request.* ENGINEERING NEWS-RECORD *is also indexed in Industrial Arts Index and Engineering Index.*

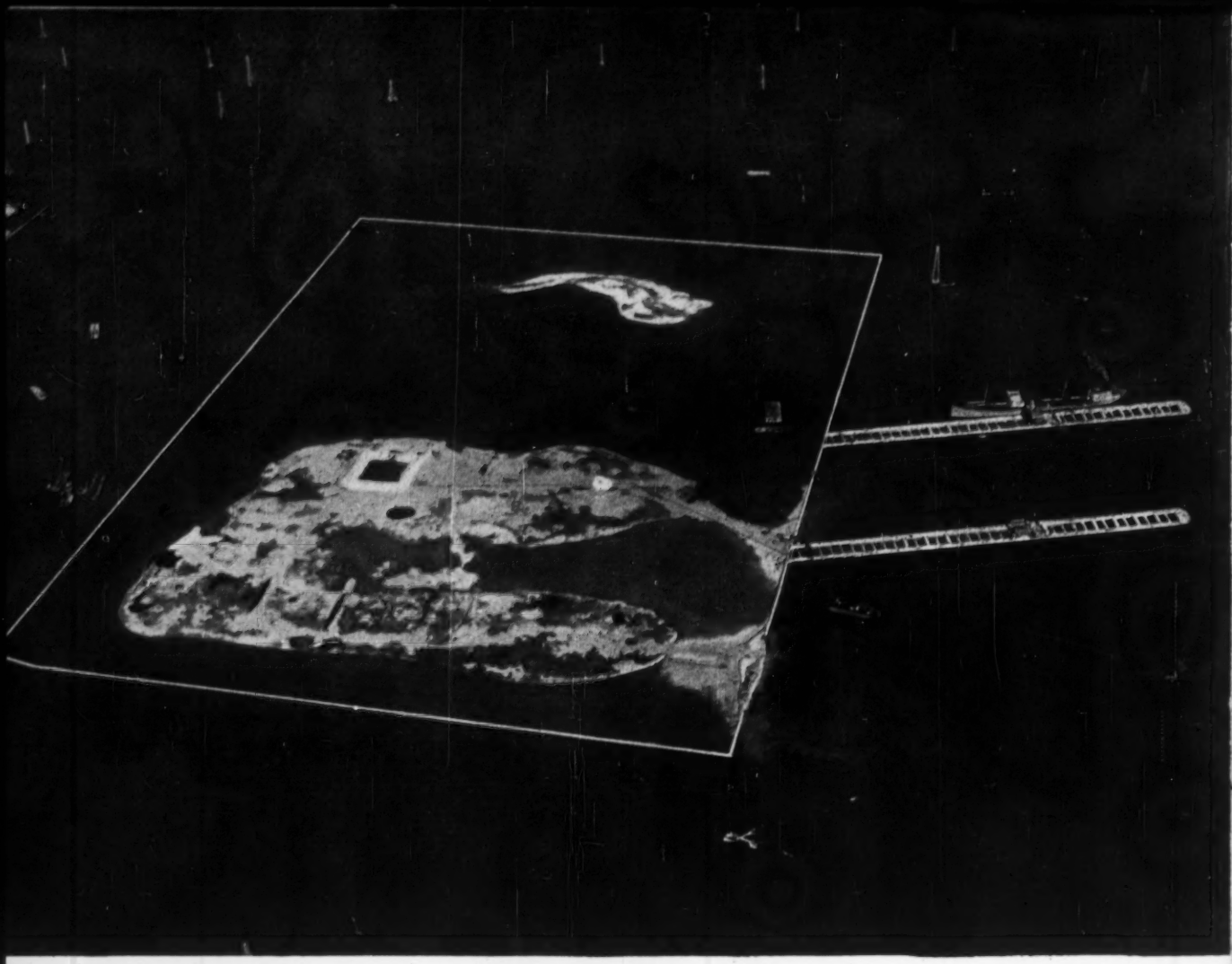
THE CONSTRUCTION WEEK

BOSPORUS BRIDGE—Although Krupp interests in Germany were the first to make Turkey an offer to build a bridge across the Borporus at Istanbul, the news from Ankara is that the French have won the contract. Turkey's experience with French contractors on its Kemer and Demikopru Dams may have been the deciding factor. Under that arrangement the contractor is paid in Turkish bonds, with the French government guaranteeing him payment up to 80% of their face value. The bridge with something on the order of a 2,000 ft main span is estimated to cost $35 million.

ROAD SHOW IN 1963—Flushed with the success of their huge 1956 Road Show, members of the Construction Industry Manufacturers' Association have called for another one. It'll be held in January or February of 1963. CIMA President Clarence Killebrew polled the organization's entire membership, asking their preference for a date for a new exposition. Some 80% of the members replied—and 74% wanted the show in 1963.

HOME RATIONING ILLEGAL—A White Plains, N. Y. lower court has ruled that rationing of building permits for new houses is illegal. The town board of New Castle, 15 months ago, voted to limit new building permits for houses to the average number issued in the preceding six years. Builders filed suit and were later supported by the Home Builders Association of Westchester who raised a war chest to help fight the cases. The judge said that the record "shows no national or state-wide emergency demanding the exercise of police power in the manner in which the town seeks to exercise it. . . ." He also pointed out that even if an emergency did exist the town "would not be empowered by town law to take measures to meet it."

MILLIONAIRE CONSTRUCTORS—The current issue of Fortune lists the 76 richest men in America (the magazine's estimates) and construction is well represented. On the basis of wealth amassed, Stephen Bechtel of San Francisco was placed in the $100 million to $200 million category. In the $75 million to $100 million class are George R. and Herman Brown of Brown & Root, Louis Wolfson of Merritt-Chapman & Scott and Henry J. Kaiser of Kaiser Engineers. Richest man in the U. S., says Fortune is Los Angeles oilman Jean Paul Getty who says he is probably worth more than $1 billion.



The order was to build an island...

AND RAYMOND* DID JUST THAT FOR CREOLE PETROLEUM COMPANY

In a joint venture with Brown & Root

Creole needed additional storage and loading facilities at Lake Maracaibo, and the most feasible way to assure enough space was to build an island a half mile from shore. This is no small task, as you may well imagine. Raymond, working in conjunction with Brown & Root, installed a rectangular 2000 by 2900 foot sheetpile wall as the first step. Currently, the section of the lake enclosed is being filled in. When completed, Creole will have an ample 125 acre island for their storage needs. In addition to the island, two 1100 by 80 foot piers were constructed to enlarge Creole's loading facilities by a considerable margin.

But this is just a part of Raymond's many activities in the booming Lake Maracaibo area. Now under construction is a new manufacturing yard to provide a steady flow of Raymond's prestressed concrete cylinder piles, and other prestressed products, for offshore drilling platforms. Raymond is proud of its role at the important Lake Maracaibo region, and of its service to the industry's growth over the past 50 years. Why don't you, too, investigate the advantages of using Raymond methods, materials and experience on your next project?

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OUR 60TH YEAR • FOUNDATIONS FOR THE STRUCTURES OF AMERICA...COMPLETE CONSTRUCTION SERVICES ABROAD

WASHINGTON OBSERVER

- '58 construction estimates soften
- FHA mortgages: Higher return rates?
- New U.S. engineer pay policy seen
- Graduate engineer crop grows

● **Government estimates of 1958 construction probably will show a slight increase in dollar volume from this year's level.** This is the best guess available of what the soon-to-be released Commerce and Labor Department figures will show. It also represents a change of feeling from only a few weeks ago.

Estimates for 1957 now put construction at about $47 billion. The experts now guess that next year's volume will just about hit this figure. This means—taking price rises and wage increases into account—that put-in-place physical volume will be less than this year, perhaps by as much as 3%.

If the figures turn out this way, it will be taken as showing how the government's tight money policy has taken hold. That is, with high interest rates, some projects just aren't worth the extra cost; and with tight money, other projects couldn't find money at any cost.

● **The government is under pressure to increase the return on FHA mortgages again.** Only a couple of months ago, the Administration permitted rates to go from 5 to 5¼%, at the same time it allowed lower downpayments. The results so far are only mildly encouraging to homebuilders: FHA loan applications have risen, but not enough to excite the industry.

Now, the builders and brokers are suggesting a ½% service charge be allowed lenders on all mortgages. The charge is now allowed on only one type of FHA-insured mortgages under $8,000.

The government has given up making advance commitments for 4½% mortgages. This is the last gasp for the GI mortgages, which are limited by law to 4½% interest rate. Fanny Mae says it can't take on 4½% paper, when it is paying 5% for the money.

● **Prospects are brighter for better pay for the 37,000 engineers and scientists on the federal payroll.** The White House last week released a bottled-up report that recommends higher salaries and other benefits. The report is the work of a special twelve-man committee created by the White House.

Perhaps coincidentally, the report (although dated April 29) was turned loose 19 days after the Russians launched Sputnik.

Key proposals would have the government meet industry salary scales, set higher starting pay for college graduates, allow personal and household moving costs for new employees, allow more top-grade (and top-pay) jobs for engineers and scientists.

Congressional approval is required for many of the proposals, but it is believed that the Administration will adopt and support a number of them at the next session of Congress.

● **An upturn in the number of graduate engineers is noted in a new study just finished by the Office of Education.** First-level (bachelor) degrees were awarded to 26,312 U.S. students last year, about 4,000 more than a year earlier. The document, "Earned Degrees Conferred by Higher Educational Institutions," can be had for $1.25 from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

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AT LESS COST!

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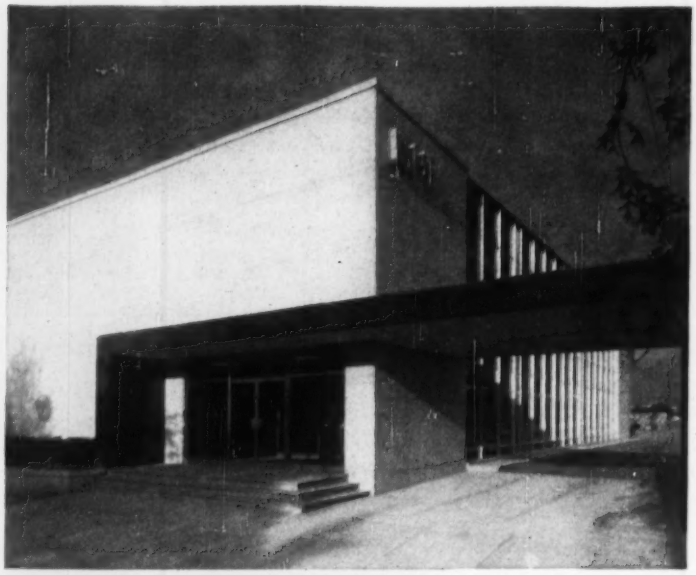

● Well worth looking into, in these days of still-rising costs, is the economy potential of prestressed concrete construction. This 100-by-64-ft. office building, two floors and full basement, 18,000 sq. ft. of floor space, quality concrete throughout, was completed months ahead of estimated schedule. Utmost fire-safety and structural soundness, plus earlier occupancy and quicker return on owner's investment. In-place cost of structure, $1.72 per sq. ft.

Precast reinforced columns, 32 ft. on centers, have steel plates welded to girder plate, creating a rigid frame. Hollow girders, precast in halves and assembled into 32-ft.-long members, were post-tensioned with three cables before erection. Three additional continuous cables were added after erection. Inside of girders was filled with grout after tensioning.

Each 6-ft.-wide double-T floor section, supported on girders 33 ft. 4 in. on centers, is stressed with sixteen wire strands, pretensioned and bonded. 'Incor' 24-Hour Cement was used throughout in precasting, for the twin advantage of profitable speed with highest quality.

Required 4500 psi strength was attained after 17 hours steam curing—3-day strengths averaged 6000 psi. 'Incor' was also used in precast wall panels.

Another convincing example of always-dependable 'Incor'* performance—soundest possible reason for insisting on America's FIRST high early strength portland cement for time saving and quality assurance.

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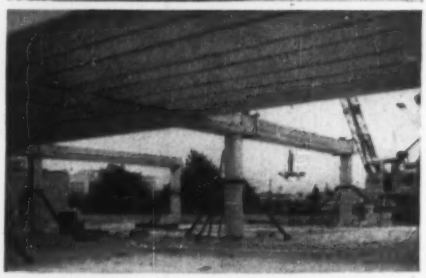

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Governors debate Glen Canyon Dam's effect on Hoover Dam's power

States Stir Up Colorado Water Fight

Who gets the power from Colorado River water while the $760 million Upper Basin project is being built and the reservoir behind its 700 ft Glen Canyon Dam is filling?

What happens to power contracts downstream in the Lower Basin where the level of Lake Mead is all-important?

Debating these questions last week in Washington, governors of the seven southwestern states split 4-3 in an Upper-vs.-Lower fight over Interior Department handling of Colorado River waters over the next 13 years.

Lower Basin states spokesmen claimed Glen Canyon Dam threatens the sanctity of their downstream power contracts.

United in an unprecedented coalition, Arizona, California and Nevada spokesmen demanded that Interior Secretary Fred Seaton guarantee fulfillment of their U. S. power contracts during construction of Glen Canyon Dam and the filling of the reservoir behind it.

The governors, flanked by their experts, debated the issue in the Interior Department auditorium, with Interior and Reclamation Bureau officials listening. Only Gov. Goodwin Knight of California was missing. (He had flu.)

Principals for the Lower Basin states attacked a preliminary study of the problem put out three weeks ago by Interior's Bureau of Reclamation—a study of hydrology. They offered a substitute statement of basic principles that stipulate: (1) "The United States shall not impair the performance of its Hoover Dam power contracts," and (2) In any year when the inflow into Glen Canyon reservoir exceeds the requirements for consumptive use below the dam (irrigation, domestic and industrial water), the government shall release half of such excess. (These releases not only would help to assure full output of contracted-for firm power at downstream plants but also would add to the production of secondary energy, sold under existing contracts, when and if available.)

• **4-3 split**—State engineer Harvey O. Banks, head of the Department of Water Resources, acted as chief of the California delegation.

But as a strategic move, California elected to play a secondary role. Gov. Ernest McFarland of Arizona took over the Lower Basin's forensic fireworks, and Gov. Charles Russell of Nevada presented their proposal on basic principles.

Upper Basin states were notably undismayed by the preliminary Interior-Reclamation study submitted three weeks ago. But they wanted more time to study both it and the alternate proposal of the Lower Basin bloc on basic principles. As senior Upper Basin governor and selected spokesman for his group, Gov. Milward Simpson of Wyoming held out firmly for more time to analyze all the implications of both proposals. He steadfastly refused to commit his four states to formal meetings with Lower Basin people at early dates which Governors McFarland and Russell urgently advocated.

However, there was good reason for haste. Under the 1956 law that authorized the big Upper Colorado River development, the Interior Secretary has to submit to Congress on Jan. 1 his first report on revenues and cost of constructing, operating and maintaining the Colorado River storage project and its participating projects.

• **Basic issue**—Lower Basin states argue that Glen Canyon—for which Reclamation awarded the main dam and powerhouse contract on a $107 million low bid just six months ago—is the "cash register" project that has to repay most of the cost of all others in the authorized Upper Basin. For this reason, Lower Basin spokesmen contend that

. . . Heat over hydrology: Debate shapes up with three Lower Basin states

NEVADA—Governor Russell: "Our proposal presents basic principles . . . water shall be released to generate contracted quantities of energy at Hoover Dam."

ARIZONA—Governor McFarland: "The Interior plan . . . does not give consideration to the power rights of the Lower Basin states."

CALIFORNIA'S—Harvey O. Banks: "We have basic prior rights for both water and power which the Interior Department plan does not protect."

Interior and the Reclamation Bureau are under pressure to show early money-making potential for Glen Canyon and that they would—or might—infringe on downstream power contracts in order to build up the power head and earning capacity of Glen Canyon.

These fears were the crux of the conflict at last week's hearing. Despite the emotional stress, state governors and their spokesman maintained an unbelievably high level of cordiality and cooperation in everything they said. It remained for California Representative Clair Engle, chairman of the House Interior Committee, to unmask the issue.

Rising from his seat as the Thursday meeting neared its luncheon recess, Congressman Engle punctured the "amity and concord" that had prevailed to that point by declaring: "To get down to brass tacks, what we are talking about is who is going to get power during the construction and filling period." This "throwing a wildcat into the hen house," to use his own words, set the tone for the rest of his comments.

When Congressman Engle finished, the meeting's chairman, Fred G. Aandahl, Assistant Secretary of Interior for Water and Power, said this was a good time for a recess. There were no dissents.

3 AGAINST 4—Shaded states oppose unshaded, including the debate's least vocal, New Mexico.

• **Back at it**—After lunch, Mr. Aandahl let the hearing run its course, dispensing equal opportunity for each side to expound its views. In the main, Mr. Aandahl's chore as mediator was made easy by the courtesy with which most spokesmen posed their questions and pressed their objectives. Only occasionally did overly plain talk ruffle the statesmanlike atmosphere.

By dint of hard digging, Lower Basin questioners pinpointed the issue for N. B. Bennett, Reclamation's director of project development, who had the job of explaining the bureau's study to the assemblage. This three-weeks-old, eleven-page document titled, "Hydrologic Bases for Financial Studies, Colorado River Storage Project," develops a working hypothesis for regulation of river flow (inflow, releases and storage) at Glen Canyon and Hoover Dams during a 13 year period, 1958-70, while this new reservoir is building up its retained storage to a substantial percentage of its total capacity.

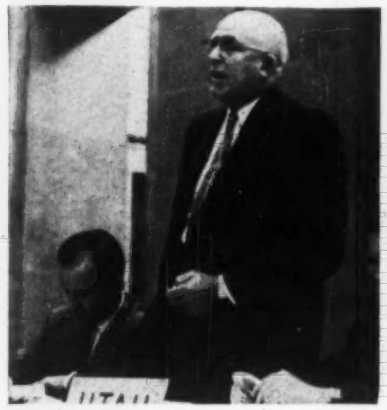
Assumptions and premises as to future hydrologic conditions and downstream water requirements had to be made before a working hypothesis could be developed. For the study submitted to the states, USBR assumed annual flow equal to average river flow during the 32 year period 1914-45, minus an appropriate amount to reflect present conditions. It also estimated future demands on Hoover Dam for downstream water uses at 8.9 million acre-ft in 1970.

California and Nevada expressed complete satisfaction with the 1970 estimated demand figures for their respective states, but Governor McFarland objected strenuously to the estimate of 1.23 million acre-ft for Arizona's consumptive use that year. Arizona contends that it is entitled by law to 2.8 million acre-ft a year, and it is suing California before the Supreme Court to protect and fortify that claim. The *entente cordial* on the Glen Canyon question does not unite the two states on this larger issue, Governor McFarland made clear. Attorneys for the two will be back at the bar belaboring each other when the Supreme Court's special master resumes hearings within a few months.

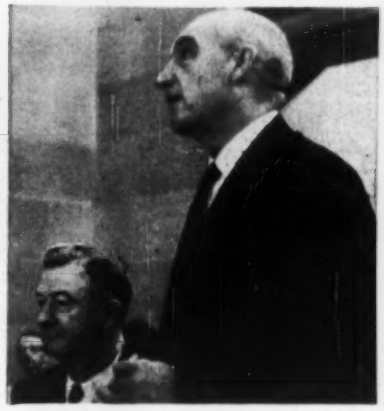
Mr. Aandahl quieted Governor McFarland's fears in part by calling attention to this statement in the study prospectus: "By use of this figure (8.9 million acre-ft), it is not intended to imply that this figure represents the legal bounds of permissible use under the law of the river."

• **Fears for the future**—More critical than the argument over Arizona's 1970 water demand was the basic question of what would happen to Hoover Dam power during the 13 years and thereafter. Lower basin people had two fears on this score: (1) What the Interior Department would do if a series of dry years, instead of average years, occurred during the 13 year period. (2) What

. . . vs. Upper Basin states which are to benefit from Glen Canyon Dam



UTAH—Governor Clyde "In the interests of full development, it seems wise now to put as much stored water in the bank as possible."



WYOMING—Governor Simpson: "The Interior proposal . . . clears away fears that Glen Canyon would adversely affect the Lower Basin."

COLORADO—Governor McNichols: "We intend to keep our commitments under the Colorado River compact. You (the Lower Basin) won't be shut down."

might result in the way of permanent criteria for operation of the river if the proposed assumptions and premises went up to Congress in a report that would thereafter become a reference document.

Roots of the first fear were exposed in one sentence of the bureau's prospectus: "Water already stored in Glen Canyon reservoir shall not be released for continuance of firm generation at Hoover." Gilmore Tillman of the Los Angeles Department of Water and Power asked how Interior could rationalize such a statement, which seemed to him to be a dishonest and dishonorable negation of a U.S. government contract.

When the air had been cleared a little by much give-and-take on this point, it appeared that the statement was not so sweeping as it sounded. It was tied into the assumptions and premises on which this working hypothesis rested, Interior spokesmen explained, and its applicability, apparently, was limited to those conditions—average water years, etc., during the 13 year span.

It was the hypothetical character of the 13 year working schedule for river operation—and the assumptions and premises underlying the working hypothesis—that bewildered and bemused nearly everybody at the hearing. Lower Basin people had a real cause for worry that the premises laid down for the hypothetical working schedule would in fact become the criteria for permanent operation under all conditions.

Assistant Secretary Aandahl deprecated that interpretation. The Secretary, he said, is required by law to report to Congress Jan. 1, and a report will be made preferably on a basis that all seven basin states can approve but, if not with their concurrence, then without it. But he refused to concede that the assumptions, premises or criteria adopted for this first report would be final and irrevocable. The law calls for a report on Jan. 1 of each year hereafter, he explained, and changing conditions will require revisions and modifications of assumptions and criteria as time passes.

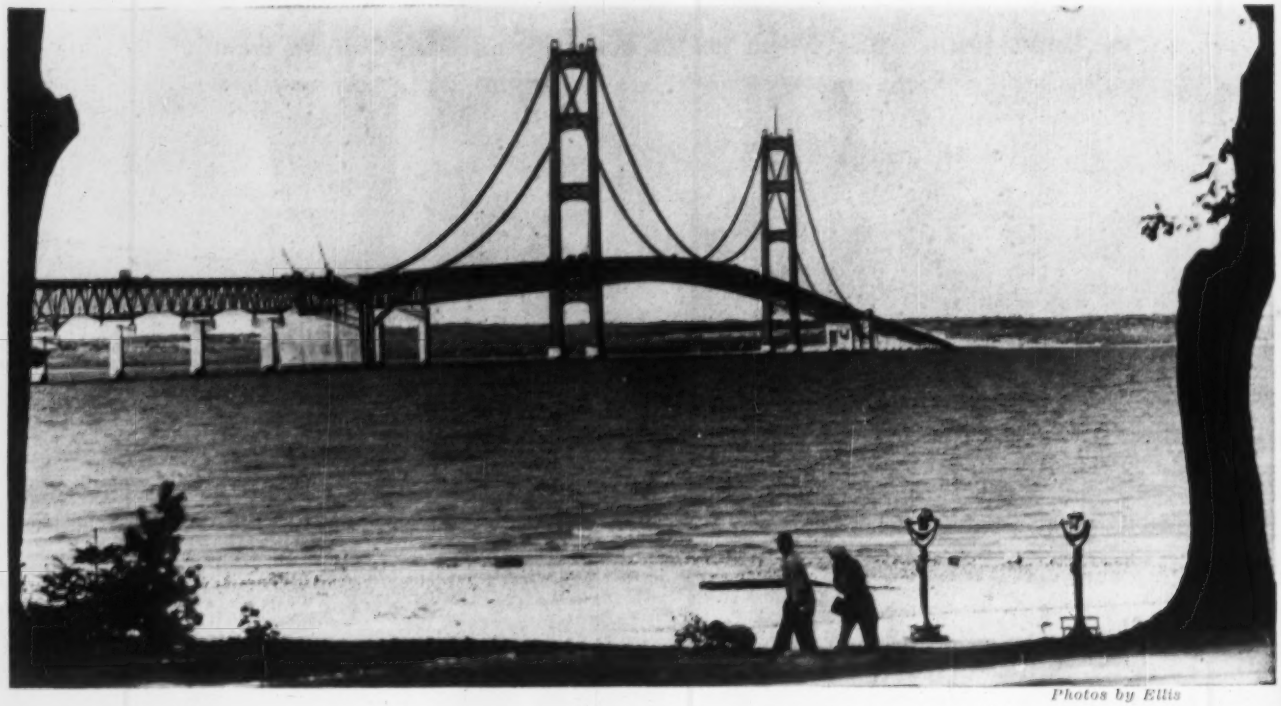
These assurances did not satisfy Lower Basin leaders. Governors McFarland and Russell and their cohorts strove mightily to induce Upper Basin spokesmen to agree to an early meeting of all seven Colorado River states. Once crystallized in a Congressional document, they emphasized, the criteria would set the pattern of permanent standards for operation of the river.

But Wyoming's Governor Simpson and his Upper Basin forces held aloof from all promises of hasty collaboration. More time was necessary, they insisted, to analyze both the bureau study and the alternate proposal of basic principles submitted by the Lower Basin Group.

As a last resort, the Lower Basin people asked Mr. Aandahl if he would meet representatives of their three states in Las Vegas or nearby Boulder City, Nev., on Dec. 5. Upper Basin states were invited to sit in at the meeting, even if not prepared to join the discussion.

Holding to the high-level attitude of basinwide cooperation, the Upper Basin spokesmen indicated they would send representatives to the Dec. 5 meeting, even if the governors themselves could not be present. Upper Basin experts also will sit in on a preliminary conference of technical staff from Interior and the states on the preceding day, Dec. 4.

COURTEOUS CONFLICT—Interior Secretary Seaton seeks governors' agreement on hydrologic data basic to financial report due to be before Congress Jan. 1.



Photos by Ellis

Final touches are given to the world's longest suspension bridge as . . .

Michigan's Bridge Dream Comes True

For seven decades engineers have dreamed of bridging the Straits of Mackinac between St. Ignace and Mackinaw City. That dream becomes a reality tomorrow (Nov. 1) when toll traffic begins flowing across the four-lane $100 million bridge.

Its designers proudly acclaim it the world's longest suspension bridge—8,614 ft including anchorages. Its builders point with pride to completion of the five-mile project in four construction seasons. And its backers are pleasantly mindful of the fact that its cost will not exceed the original estimate. The contract cost is about $80 million.

The target completion date of Nov. 1, 1957 for opening the bridge to traffic was established to accommodate the annual influx of big game hunters. The hunters, however, together with other traffic during November will constitute only about 10% of the annual traffic over the bridge. The biggest revenue months should be July and August which average 26% and 32%, respectively, of the annual traffic.

Toll charges will compare favorably with those of the state-owned ferries which the new bridge replaces. One-way fares range from $3.25 for a passenger car to $14 for the largest trucks. Pedestrians will not be permitted on the bridge, but intracity bus service will be operated by the Michigan Toll Bridge Authority.

Mackinac Bridge is 17,913 ft long. It is made up of 8,614 ft of suspension spans including anchorages, 16 deck truss spans totaling 5,691 ft on the south side, and 12 deck truss spans totaling 3,608 ft on the north, or St. Ignace side. The bridge crosses Mackinac Straits on almost a direct north-south line.

The suspension portion of the bridge includes a 3,800 ft main span, two 1,800 ft side spans, two 472 ft backstay spans and two 135 ft long concrete anchorages.

The 3,800 ft main suspension span is second in length to the 4,200 ft Golden Gate Bridge span. But the use of five cable spans with remote anchorages located for economy at shallower rock locations makes the 8,614 ft link between anchorages the longest in the world. The stiffening trusses are 38 ft deep and 68 ft c-c.

• **Design factors**—The bridge is designed for H20-S16 truck and trailer loading, and for a wind pressure of 50 psf combined with dead load. The anchorages were designed for an ice pressure of 115,000 lb per lin ft and foundations were designed for an allowable pressure of 15 tons per sq ft.

The four-span continuous deck trusses in the approach spans contain floor members of carbon steel designed for 20,000 psi and silicon steel with a working stress of 27,000 psi. Field connections were made with high strength bolts.

The stiffening trusses were designed to be fastened to the 24½ in. dia suspension cables at the center line of the 3,800 ft main span by heavy plates pinned to a special cable band at that point. Thus the traction forces, longitudinal wind and torsional effects resulting from asymmetrical loading are transferred to the main cables.

• **Cable-spinning record**—New cable-spinning records were made last year when the two suspension cables were spun in 78 two-shift working days, between July 18 and Oct. 19 (ENR Mar. 28, 1957, p. 55). The 24½ in. dia cables stretching between anchorages located 8,344 ft apart required 11,100 tons or a total of 41,000 miles of ⅛ in. dia wire.

The total cost of 55,000 tons of structural steel together with that of the cable items was nearly $45 million—the largest bridge contract ever written.

The main towers rise to a height of 525 ft above their supporting concrete piers. They contain a total of 13,000 tons of structural steel.

• **Foundation construction**—Constructing the foundations for the bridge was also a gigantic undertaking. It included the placing of nearly 500,000 cu yd of

DESIGNER D. B. Steinman, views his handiwork against a back-drop of the bridge.

FOUR-LANE APPROACH HIGHWAY on the St. Ignace side of the Straits includes an interchange with U. S. 2 leading north to Sault Ste. Marie, and west to Escanaba.

concrete at a cost of nearly $26 million. Large pours of concrete were made under water, using grouted-aggregate concrete. A record was set in May 1955 when 6,250 cu yd was placed in one day, in one of the piers.

Caissons for the two 116 ft dia main tower piers are founded on rock 210 ft below water (ENR Jan 27, 1955, p. 35). The south cable-bent pier was also carried to rock in open caisson. The other piers were constructed in open sheetpile cofferdams.

• **Four-lane roadways**—The deck of the bridge consists of two 23 ft roadways with a 2 ft wide mountable center mall, and two 3 ft sidewalks. A 6 in. reinforced concrete slab with 1½ in. of bituminous concrete surfacing is used on the approach spans.

A steel-grating roadway floor is used on the suspension spans. The outer lanes are 4½ in. deep grating filled with lightweight portland cement concrete and surfaced with bituminous concrete. The two center lanes and the mall are open grating to reduce weight and for aerodynamic reasons.

• **Contractors**—At the height of construction 1,500 men were employed at the bridge site, including foundation and superstructure work. Major contractors and contracts include: Merritt, Chapman & Scott Corp., substructure; American Bridge Division, U. S. Steel Corp., superstructure; Louis Garavaglia and Johnson Greene Co., concrete deck and bituminous surfacing.

Contractors on the north connecting highway are S. J. Groves & Sons, A. Lindberg & Sons, and Bacco Construction Co. The Omega Construction Co. is the contractor on the administration building, located at the north end of the toll bridge. Blumenthal-Kahn Electric Co., Inc., is the contractor for lighting and electrical work on the bridge. The Prepakt Concrete Co., Cleveland, Ohio, was subcontractor for the grouted-aggregate concrete in the foundations.

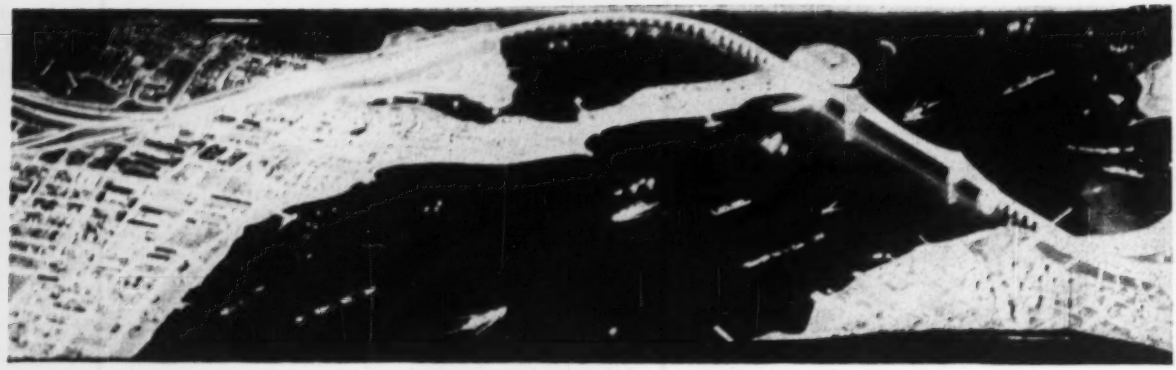
• **Credits**—D. B. Steinman, consulting engineer, designed the Mackinac Bridge. The design and office supervision was divided among his associates as follows: substructure and main towers, R. M. Boynton; cable work, W. E. Joyce; remainder of superstructure, C. H. Gronquist; approach viaducts and roads, toll collection facilities and administration building, J. London.

J. W. Kinney, is resident engineer in charge of construction. His assistants are W. F. Fry and Gordon Dallas. Russell Garrard is office engineer, and George Zack is concrete inspector on the superstructure.

Prentiss H. Brown is chairman of the Mackinac Bridge Authority. Lawrence A. Rubin is executive secretary, and C. E. Haltenhoff is general manager.

—Table of Important Construction Dates—

Construction contracts negotiated	**March 1953**
Bids received for sale of bonds	**Dec. 17, 1953**
Bonds sold and financing completed	**Feb. 17, 1954**
Engineers' precise surveys begun	**Mar. 6, 1954**
Floating equipment assembled	**March 1954**
Construction begun (foundations)	**May 1954**
Anchorages completed to elevation + 10	**November 1954**
First winter shut-down	**Jan. 14, 1955**
North main pier reached bedrock	**Apr. 30, 1955**
South main pier reached bedrock	**May 6, 1955**
Concreting record established (6,250 cu yd. in a single pier in one day)	**May 1955**
Steel erection started (main towers)	**July 2, 1955**
Towers completed to full height	**November 1955**
Worst storm (76 mph wind)	**Nov. 16, 1955**
South backstay span floated to position	**Nov. 19, 1955**
North backstay span floated to position	**Dec. 18, 1955**
Second winter shut-down	**Dec. 19, 1955**
Cable spinning begun	**July 18, 1956**
Cable spinning completed	**Oct. 19, 1956**
Third winter shut-down	**December 1956**
Final gap closed with steel	**May 17, 1957**
Erection of suspended spans completed	**July 1957**
Scheduled opening of bridge to traffic	**Nov. 1, 1957**
Formal dedication of the bridge	**June 25-28, 1958**



THROGS NECK BRIDGE will have a 1,800 ft main suspension span over the East River at New York City.

Work Starts on New East River Bridge

Bids were taken last week for three important elements of the Throgs Neck Bridge over the East River at New York City. Also, official groundbreaking ceremonies were held for this 2,910 ft suspension bridge.

The Triborough Bridge and Tunnel Authority announced receipt of bids totaling $24 million for three major contracts. Low bidders were Merritt-Chapman & Scott Corp., $7,490,790, for construction of foundations for two towers; Bethlehem Steel Corp., $10,457,664, for erection of the towers and anchorage metal work; and American Bridge Division, U.S. Steel Co., $6,291,739, for cables and suspenders.

To be constructed between the boroughs of Bronx and Queens, near the confluence of the East River and Long Island Sound, as part of a bypass of congested areas of New York City, the suspension bridge will have a 1,800 ft main span over the river channel and two 555 ft side spans. It will carry six lanes of traffic and have a width between centers of cables of about 93 ft. Clearance under midspan will be 142 ft and at the towers 135 ft.

Tower foundation work requires the sinking of two caissons to a depth of 155 ft below mean high water. The foundations will support 75x162 ft piers. The towers will extend 360 ft above the river and require 11,000 tons of structural steel. The two main cables, each composed of 10,952 wires, will be 23 in. in diameter.

• **Long approach viaduct**—The TBTA estimates the crossing from shore to shore will cost about $90 million. The crossing includes the suspension bridge, a 3,400 ft approach viaduct on the Queens side and a 6,000 ft viaduct on the Bronx side.

Because of the presence of the New York State Maritime College on the narrow Throgs Neck peninsula on the Bronx side, the approach viaduct will pass high over Throgs Neck, swing in a wide 90 deg bend across a cove and then descend to the mainland. There it will connect with the Cross-Bronx Expressway, leading to the George Washington Bridge to New Jersey on the west, and the Throgs Neck Expressway, leading northward to the New England Thruway. These approaches, to be built as part of the Interstate Highway System, will cost $55 million.

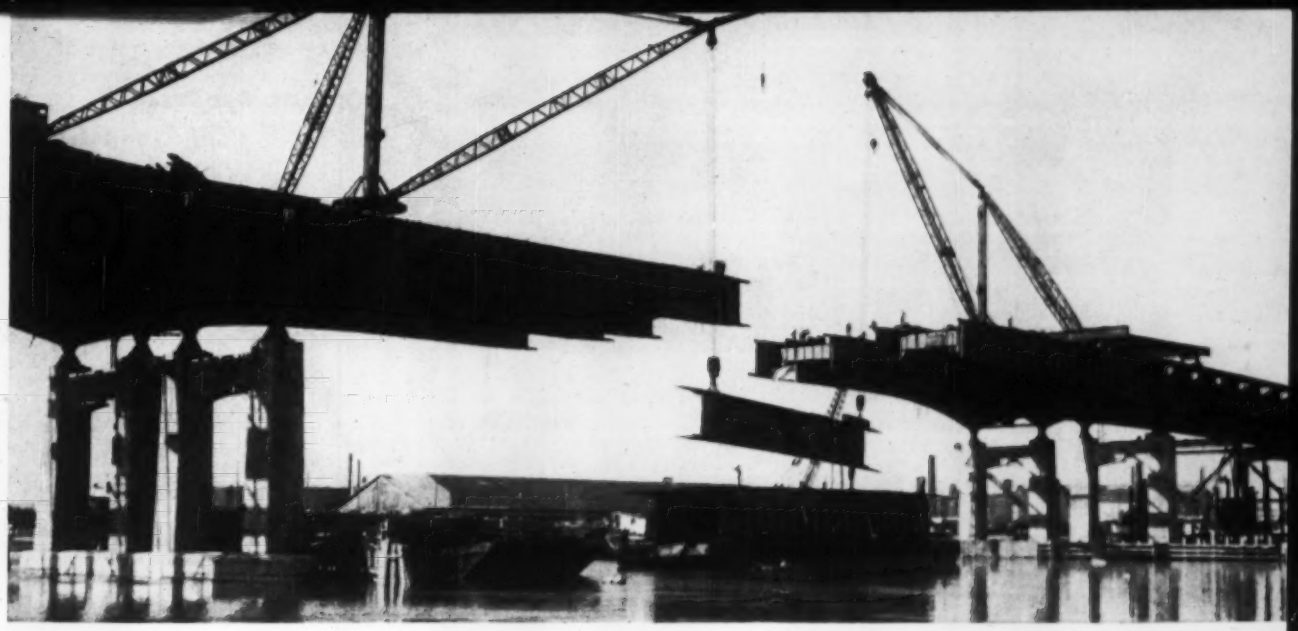
Ammann & Whitney are the consulting engineers for the suspension bridge and E. Lionel Pavlo for the viaducts. Aymar Embury II, A. Gordon Lorimer, John B. Peterkin and Theodore J. Young are retained as consulting architects for the project. All are New York firms.

"Saved" Miles Added to U. S. Road System

"Savings" in road mileage originally planned for the 40,000 mile interstate highway system (ENR Oct. 24, p. 19) now appear as new sections of highway on map released last week.

The savings—a total of 1,102 miles—are due to relocation and shortening of the routes as they were originally planned in 1947. In addition, the 1956 Highway Act provided an added 1,000 miles. Thus the total "new" mileage that is available for allocation is 2,102.

Biggest individual addition to the system (solid lines) as originally planned, is a 547 mile stretch to connect Denver and Cove Fort, Utah (7). Of considerable significance, too, is a 431 mile road to connect Canton, Ohio, and Charlotte, N. C. (5). This road, passing through Charleston, W. Va., apparently would include West Virginia's hard-pressed turnpike.



Connecticut Turnpike span is closed and . . .

A New Plate Girder Record Is Set

Steelwork closure has been completed on the longest plate girder span—387 ft—in the Western Hemisphere. The structure crosses the Quinnipiac River at New Haven, to carry the six-lane Connecticut Turnpike over lowlands and the stream. The bridge also is the longest water crossing on the 192 mile highway.

Designed by D. B. Steinman, New York City consulting engineer, the 11,500 tons of steel in the superstructure were fabricated and erected by Bethlehem Steel Co., after substructure work had been completed by Moore & Lopier of New York City.

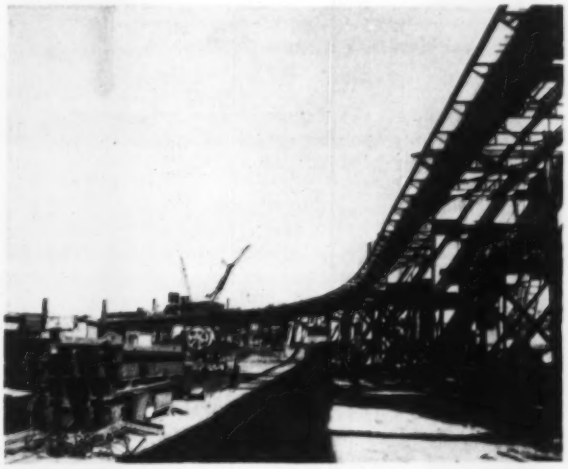
Built on an arc of almost 180 deg, curving to the north, the 3,769 ft structure stands on 21 piers, with the two center piers providing a clearance of 55 ft above mean high water.

The main girder—being closed with final steel in the photo at top—is flanked with two side spans, each 258 ft long. The final gap was closed with four girders, each about 108 ft long and weighing about 89 tons.

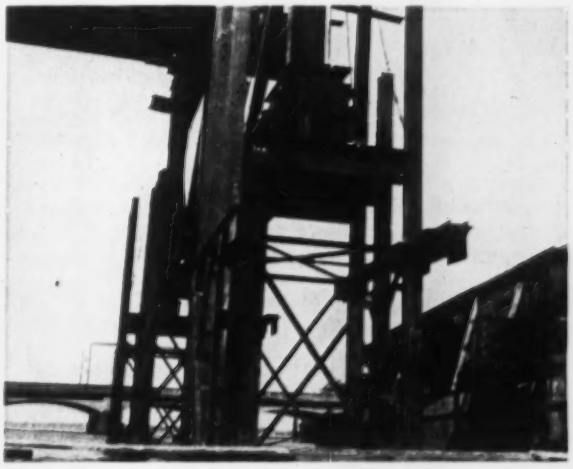
The 21.6 ft deep haunches for the main girder were split longitudinally for ease of handling and shipping, then riveted together in place.

Previous U.S. plate-girder record-holders were the New Jersey Turnpike bridges over the Hackensack and Passaic rivers. Both of these have 375 ft center spans.

TRAVELER places steel from east bank of river over piers and temporary supports.



LONG CURVE of structure, to gain required height over flat terrain, is evident in view looking westward toward New Haven.



TEMPORARY SUPPORT for main girder erection is supplied by spud pile assembly. Half of main-girder haunch rests on barge.

NEW-TYPE WALL made of 2½ in. thick, prefabricated, load-bearing, brick panels enclose a one-story dwelling in Geneva, Ill.

FAST ERECTION—Five men with a vacuum lift placed the panels in 8½ hours.

EASY FASTENING—One bolt at top and bottom holds panel to steel angles.

Brick Walls Are Prefab Panels

In a field test termed "successful" by the Structural Clay Products Research Foundation, prefabricated load-bearing panels of brick have been used to wall a 1,800 sq ft one-story dwelling in Geneva, Ill.

The panels are 8 ft high, 1 ft wide and 2½ in. thick. Each contains 36 oversized face brick, set in stack bond (directly above one another) and tied together with a fast-setting grout in the production plant. In the building each panel is fastened with one bolt at top and bottom to horizontal steel angles. Vertical joints between panels are power-mortared.

Five men placed the entire wall—1,200 sq ft of panels—in 8½ hours. Using a hoist equipped with vacuum lifting cups, they set the panels without mortar on the foundation and bolted them in place. The wall was then ready to take load, and the crew erected the wood roof trusses immediately, leaving the vertical joints until later in order to get the roof closed in quickly.

After mortaring the interior vertical joints, workmen furred and finished the wall conventionally. Exterior joints will also be power-mortared as the house approaches completion.

Erection costs for the wall, including mortaring, totaled 30 cents per sq ft of wall, according to Robert B. Taylor, director of SCPRF. No manufacturing cost for the panels, which were fabricated at the Research Foundation's pilot plant in Geneva, was reported. However, when Mr. Taylor announced development of the panel last year at the Building Research Institute's masonry conference in Washington, D. C. (ENR Sept. 27, 1956, p. 24), he estimated the materials would cost about $1 per sq ft.

Accent on Safety

Safety Council and Bridge, Tunnel & Turnpike group meet; have same theme

Safety—both as a result of construction's efforts for the general public, and on construction work itself—took center stage in meetings in Chicago last week.

The occasion was the simultaneous meetings of two national organizations: the four-day 25th annual session of the American Bridge, Tunnel and Turnpike Association; and a two-day meeting of the National Safety Council. Both organizations devoted much of their discussion time to the matter of building safety into the nation's new highways; the Safety Council added discussion of safety on construction jobs.

Taking the viewpoint that their facilities—or many of them—will be in direct competition with free roads from a business viewpoint, the toll association members decided that they have a strong selling point in the matter of safety.

For example, one of the technical sessions—conducted as a panel discussion under Norman Damon, vice-president, Automotive Safety Foundation—produced the concensus that "safety is as much a saleable commodity in the operation of modern toll-highway facilities as are time-saving, convenience and comfort."

Echoing these conclusions were some sessions of the Safety Council.

Said Edward H. Holmes, Assistant Commissioner for Research, U. S. Bureau of Public Roads: "Safety features being designed into the interstate system are conservatively expected to save at least 4,000 lives annually by the time the present program is finished.

Turning to safety within the construction industry itself, the Safety Council heard Ellis L. Armstrong now Utah Director of Highways and formerly with consultants on the St. Lawrence Power Project, laud the safety record on that huge project.

Said Mr. Armstrong: "Workers on the (St. Lawrence) project have set an accident-frequency record of about half the national average for heavy construction, in over 60 million man-hours of exposure thus far."

The bridge, tunnel and turnpike group elected as president D. Louis Tonti, Executive Director of the New Jersey Highway Authority.

In its business sessions, the Safety Council named William G. Hawkins, of Winston Bros. Co., Minneapolis, as general chairman.

The construction section of the Safety Council announced the formation of five divisions, to cover Heavy, Highway, Building, Home Building and Special Construction safety problems.

"We Use It—We Choose It Again"

...SAY 47% OF 1956 HYDROCRANE BUYERS

IT has happened again. The number of happy Hydrocrane owners who return to trade in an old Hydrocrane, or add a second, third and, in some cases, a fifth or sixth Hydrocrane — continues to grow year after year. Here is the record:

	1954	1955	*1956*
Per cent of repeat orders:	38.6%	43.8%	47%

What's more — the total number of machines sold to these 1956 repeat buyers was more than double the 1955 figure. Why? Let's look at the facts:

Hydrocranes have plenty of power and reach. Available in two models, either 5- or 10-ton rated capacity, they offer hydraulic telescoping booms with up to 50 feet of reach.

Hydrocranes are lightweight, compact and fast. All-hydraulic design eliminates hundreds of parts, permits mounting on a conventional truck. This makes Hydrocranes fast over the highways, maneuverable in traffic and a "squeeze-in specialist" on those close-quarter jobs.

If you are not now reaping Hydrocrane profits, take a tip from the growing group of satisfied owners who return again and again for *additional* Hydrocranes. See your Bucyrus-Erie Hydrocrane distributor for details.

175H57C

Bucyrus-Erie Company • South Milwaukee, Wisconsin

How job site batching with supplier $920,000 contract of 5 stationary plants

On the southern outskirts of San Francisco above San Bruno is a 5000 acre hillside area of new subdivision and shopping center construction. 6 ready-mix suppliers were in position to bid on the contracts: 5 stationary plant operators and Cupertino Concrete Co., the one Noble-Mobile batching plant on wheels operator. Cupertino was able to take the job at a price 8% below the nearest competitor yet make a profit averaging 6%. By driving his Noble-Mobile to the job site and producing there, Cupertino reduced transit truck hauls to a maximum of 2 miles and saved over 50% on hauling costs. Each Cupertino transit truck works an average of 6 hours a day making up to 12 trips of 5 yards per trip, totaling 60 yards of concrete per day per truck. 60 yards supplied from the nearest competitive stationary plant would have required 2 to 3 trucks. Cupertino saves up to 8 transit trucks.

When the job started in August, 1954, Cupertino located the Noble-Mobile in the center of the first project so the maximum haul would be only 1 mile. On completion of that project and the beginning of another project 1.5 miles distant, Cupertino closed shop on a Friday night and by the following Monday morning had dismantled, moved and reassembled the Noble-Mobile in the new location and was delivering concrete. The cost of setting up the Noble-Mobile in the new location was a mere fraction of what it would have been to install a stationary plant. Saved were the weeks and even months wasted in cutting through legal red tape to secure permits and complete construction. A further source of profit is the do-it-yourself residents of the newly completed homes.

Batching plant on wheels driven to the job site saves erection costs, taxes, site availability problems. Purchase is easier to finance than stationary plants. Pays for itself in savings from shorter hauls. Saves outlay for extra transit trucks and cost of depreciation. Many producers maintain one or more Noble-Mobiles in reserve to handle sudden surges of business and to discourage competitors from stepping in.

Pouring site on 16 per cent grade 1.9 miles below Noble-Mobile plant. Arrow points to closest stationary plant 3.4 miles distant. Noble-Mobile was stationed above construction area so all hauls would be downhill. Competitors had to compute costs on slow, ponderous up-hill drags.

Concrete for 10,000 homes in a 10 year building program! $35,000 Noble-Mobile batching plant, located 2 miles above, supplies concrete for foundations, sidewalks, retaining walls, driveways, patios.

NOBLE-MOBILE
Batchmobile®
Covered by patents pending

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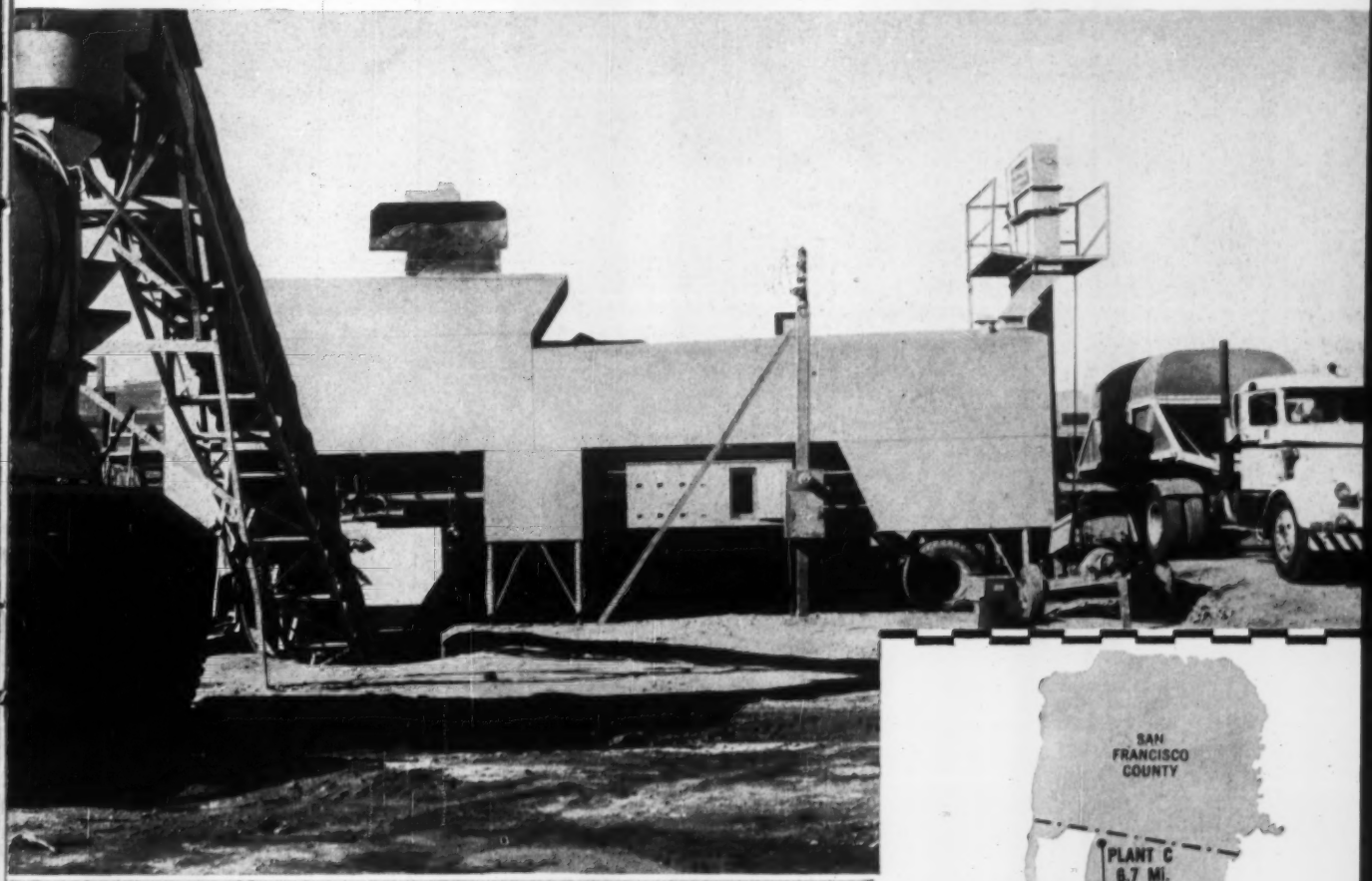
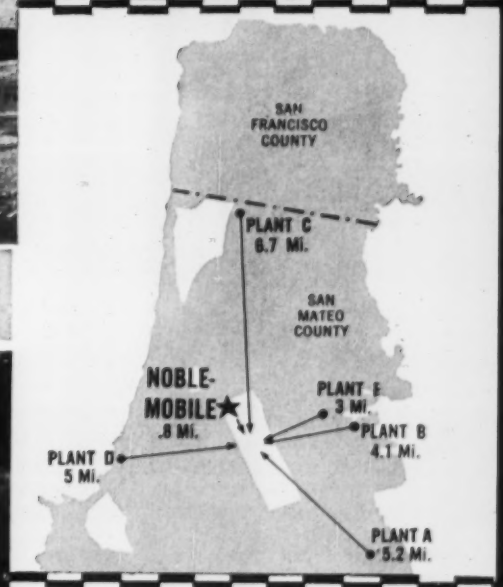
52 Vanderbilt Ave., New York 17, N. Y., ORegon 9-6475
Export Distributor: Frazar International Corp., San Francisco

NOBLE-MOBILE got concrete at 6% profit against bids



Supplies up to 400 yards per day to transit trucks. Bulk cement storage with truck hopper unloading screw and elevator. Weighs aggregates and cement separately and simultaneously. Automatic or semi-automatic control. Set up in 1 day. No field wiring or concrete foundations required on base plant.

Fed by scooploader from aggregate and sand piles. Cost to haul aggregates, sand and cement from producing site to Noble-Mobile no more than to haul to general area where competitors' stationary plants are located. Plant may also be fed by conveyor or crane.



Map of construction areas south of San Francisco showing Noble-Mobile site and competitors' stationary plants — A, B, C, D, E. Note the .8 mile haul from the Noble-Mobile compared with the up to 6.7 mile hauls from the others. "Economics of job-site batching are so sound no outside stationary plant can compete," reports Bob Soldini, Cupertino Concrete

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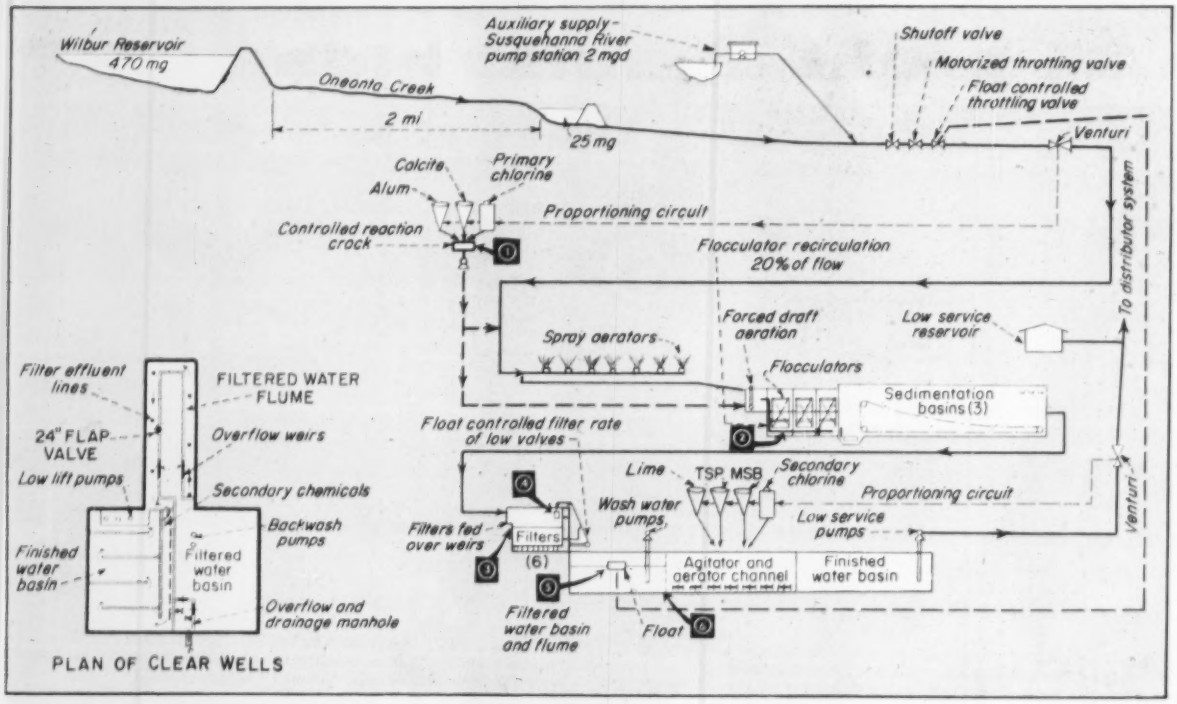


Flow diagram of 4.5 mgd plant at Oneonta, N. Y. and photos show how . . .

Small Waterworks Features Six Major

The Catskill Mountain city of Oneonta, N. Y., has just built a waterworks boasting a half dozen major innovations that promise to produce clearer, better tasting water and make the plant easier to operate—and that already have reduced construction cost of the plant. The 4.5 mgd facility cost $600,000, $200,000 less than the norm estimated for this size water treatment plant.

Most of the innovations—the ideas of progressive sanitary engineer Thomas M. Riddick of New York City—merit the careful consideration of water engineers and are of interest to all involved in the financing and construction of such facilities.

Briefly, Mr. Riddick's innovations are these:

• A scarcely used chemical known as calcite—a finely ground limestone—is added to the raw water along with alum coagulant. The alum-calcite combination, which must be pre-mixed instead of being introduced separately, has been found to produce clearer and better tasting finished water.

• About 20% of the effluent from the flocculators is recirculated to the first flocculator unit. This unprecedented feedback, heavy in floc, has been found in tests to provide effective nuclei around which new floc particles can build, thus improving the effectiveness of flocculation and subsequent sedimentation.

• Rapid sand filters are fed over weirs set at the same elevation which is above the highest water level in the filters. Thus, regardless of plant operating rate or head loss through individual filter beds, the same amount of water is fed to each filter. In conventional design, filter influent enters below water level.

• Each filter rate-of-flow controller, a butterfly valve, is controlled by a float in the filter. Therefore, each filter discharges at exactly the same rate as the filter input, regardless of plant operating rate.

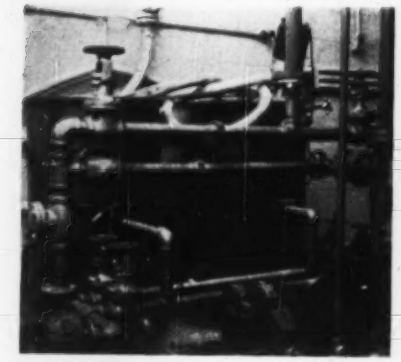
• A special basin, containing filtered but unlimed water and interconnected with filter effluent channels and finished water basin, functions to keep the entire water treatment plant in continuous hydraulic balance, eliminating the need of balancing basins at the close of an operating period. A float in this basin controls the main raw water throttling valve on the plant inlet line. The same novel basin also acts as backwash water storage, thereby minimizing backwash storage requirements.

• Finally, the new Oneonta works features advanced control circuitry, enabling one operator to do almost everything from a central control panel.

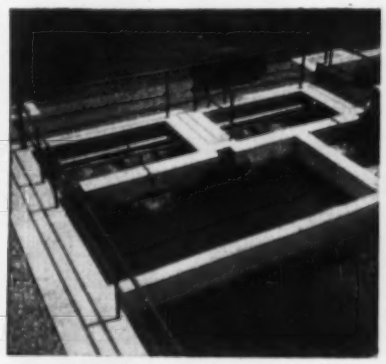
Although many of the above ideas are aimed at improving quality of finished water and easing plant operation, several combined to place the bid price some $200,000 below the estimated norm for a conventional 4.5 mgd treatment plant rated at 2 gpm per sq ft of filter area. Actually, the plant can run continuously at 50% overload with no discernible impairment of water quality. The $600,000 final cost of the facility included low lift distribution pumps and control equipment for three service districts.

The plant draws directly from a 25 mg intake reservoir fed by a 470 mg upstream reservoir on Oneonta Creek. Turbidity is high following rainfall because of two miles of open stream flow. The existing sources will be soon augmented by a 2 mgd pumping station now being constructed for the city of Oneonta on the nearby Susquehanna River.

The new works provides a 4.5 mgd flow: spray aeration (for taste and odor control), 2 minutes of forced draft aeration, 33 minutes of flocculation, 2½ hours of sedimentation and 2 gpm per sq ft of filter bed area. Water treatment can be conventional, excess



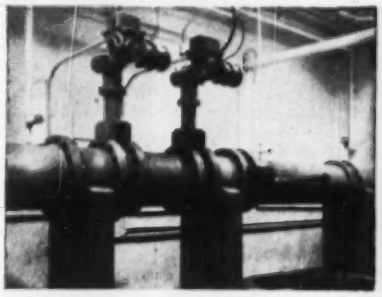
1 ADDING CALCITE to alum coagulant in crocks shown produces better water.

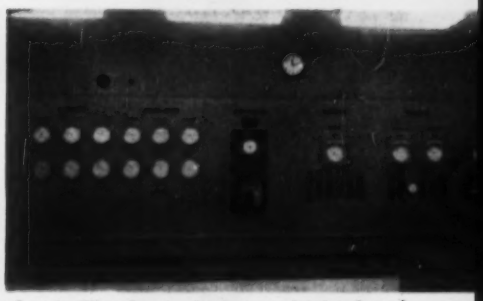


2 RECIRCULATION of flocculator effluent to first bay shown builds up floc.

3 WEIRS assure uniform input to six rapid sand filters. Note float.

4 FLOAT CONTROLLED filter effluent valves (via cable) match effluent to input.





5, 6 MAIN INLET LINE is controlled by float in filtered water basin to maintain plant hydraulic balance. Plant's control panel (right) contains push buttons for most equipment.

Innovations

chlorination plus conventional, or excess chlorination and dechlorination with sodium metabisulphite. The premixed chemicals for coagulation can be added either before or after spray aeration.

• **Premixed chemicals**—Oneonta's raw water supply, like many other surface waters, is low in natural alkalinity (about 15 ppm). Added by itself, alum coagulant would reduce alkalinity to the point where alum would pass the filters.

Waters of this type would normally have lime or soda ash added to hold up the alkalinity. But these chemicals also appreciably raise pH, which hinders coagulation. In practice, because of resulting high pH, it is often very difficult to achieve completely satisfactory coagulation with either lime or soda ash.

Mr. Riddick believes he has a better answer in calcite, a high calcium crystalline limestone from the Newton, N. J., quarry of Limestone Products Co. This chemical, when allowed to react partially with alum in a premixing crock, satisfies the principal alkaline demand of the alum (rather than bicarbonate alkalinity of the raw water doing so). Alum flocs also build around the partially dissolved calcite particles, producing a denser, more full bodied floc than is obtainable with lime or soda ash. Further, Mr. Riddick has observed that alum-calcite coagulation is less inhibited by high pH than are other combinations of coagulant aids.

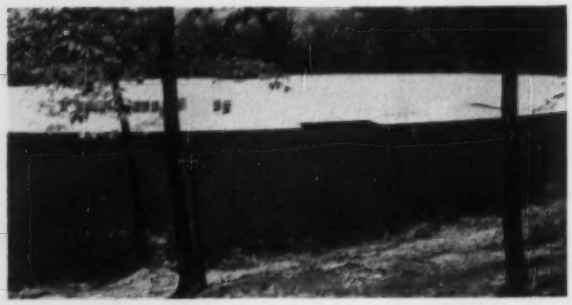
Another advantage Mr. Riddick has found for his new method is in corrosion control, accomplished by the addition of secondary lime after filtration. Since the use of calcite as a primary alkali enables the maintenance of much higher alkalinity of the treated and filtered waters, the water can be rendered non-corrosive at a lower pH. High alkalinity, Mr. Riddick has observed, definitely inhibits corrosion, along with pH control. In conventional plants the application of secondary lime is generally limited to that producing a pH of about 8.6 to 9.0, as higher pH values produce a flat taste.

The net results for alum-calcite coagulation, Mr. Riddick has found, are a clearer water—though better coagulation and subsequent settling—and a better tasting one for less chemical cost.

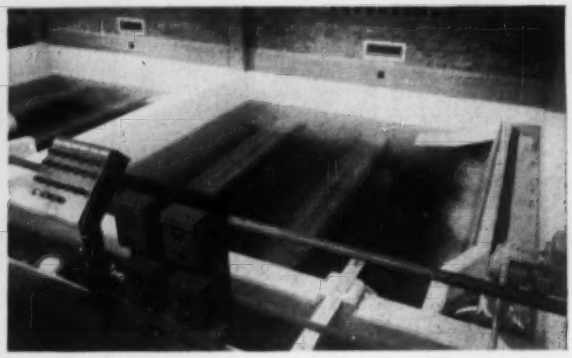
Oneonta raw water arrives at the new plant with a pH of between 6.8 and 7.0 and a bicarbonate alkalinity of 15 ppm (35-40 ppm hardness). At present, 25 ppm of alum and calcite between 50% and 75% of the alum

EXTERIOR of $600,000 waterworks presents simple and pleasant architectural appearance.

. . . More advanced features of Oneonta's new waterworks



STEEL STANDPIPE, 130 ft in dia, is roofed with flat asbestos-cement panels. Vents prevent condensation on framing.



FILTER BACKWASHING is controlled from tilted pushbutton panel. Trough attached to weir prevents seiche.

SPRAY AERATION nozzles are located on roof of sedimentation basin. Capacity is variable from 4.5 to 9 mgd.

dosage are added for coagulation. A year or so of operation should prove out the best rates of application. After filtration, lime is added to bring pH of the finished water to between 8.4 and 8.6. It then contains about 35 ppm of alkalinity.

The calcite and alum must be premixed because calcite will not dissolve in raw water if added separately. But if the two chemicals are allowed to react together for too long a time, the agglomerated flocs do not have power for further adsorption—and hence will not perform their function of adsorbing color and iron from the raw water. Actually, Mr. Riddick has not found the reaction to be a particularly sensitive one; about 1 minute of contact is the proper time.

Chlorine also is added to the calcite-alum reaction, but its presence has been found unessential to the process. Rate of application of raw water chemicals is controlled by the raw water venturi meter. Following spray aeration, the chemicals are rapid mixed with raw water by diffused air in a channel along the inlet end of the flocculation basins. This aeration also holds undissolved calcite in suspension, though, because of dilution, little further chemical reaction has been found to take place.

• **Flocculation**—Three flocculation bays were installed at Oneonta, with the number of longitudinal type paddles decreased in each succeeding bay to achieve a tapered mixing effect. The 20% feedback from the last bay to the first bay is accomplished by use of an air lift.

Undissolved particles of calcite, in addition to forming nuclei for the alum floc, also act as weighting agents in settling.

Sedimentation basins, three of them, have a width to length ratio of 1:7 with water depth of 11.7 ft. Each basin is equipped with 98 ft of polyvinyl plastic effluent weir. Overflow rate is 600 gal per sq ft per day at the design flow. Basins are covered, with the roofs being put to second use as a basin for the spray aerators.

• **Filters**—The filter building houses six 256 sq ft filters, each consisting of 30 in. of 0.4 mm sand atop 19 in. of gravel over asbestos cement underdrains. The gravel layer, thicker than usual, is graded from 1/12 in. at top to 1½ in. at bottom.

Each filter is fed from 13 ft of plastic weir, all weirs being set at the same elevation to produce identical filter input rates. Drop over the weirs varies with length of filter run, from 12 to 2 in. Experimental runs showed that the drop tends to break up residual floc, but that no floc passes through the filters, even with a fall tested continuously at 18 in.

A small trough at the end of each filter imparts a rotary motion to the water, which acts to prevent wave oscillation, or seiche, created by the weirs. This rotation also tends to reagglomerate floc particles, thus compensating for any breakup during the unprecedented weir overflow.

Butterfly valve filter effluent rate controllers have counterweighted crank arms connected to counterweighted steel floats in each filter by flexible monel cables. The float controls the degree of valve opening, and consequently maintains effluent rate identical to filter input rate.

Filters are not equipped with surface wash units; the designers are depending upon a high backwash rate to clean the sand. Two 3,000 gpm pumps drawing filtered (but unlimed water) can backwash thereby achieving 50% sand expansion.

Filters discharge into a most unusual clear well arrangement (see drawing). Filter effluent lines terminate in a flume discharging through an aeration and mixing channel into the finished water basin that supplies low lift distribution system pumps. Overflow weirs along the flume discharge into the so-called filtered water basin—the

Here, for the first time, is a complete valve and remote control system — now offered as a "packaged" unit by S. Morgan Smith Co. It is designed to satisfy two basic applications, either singly or in combination:

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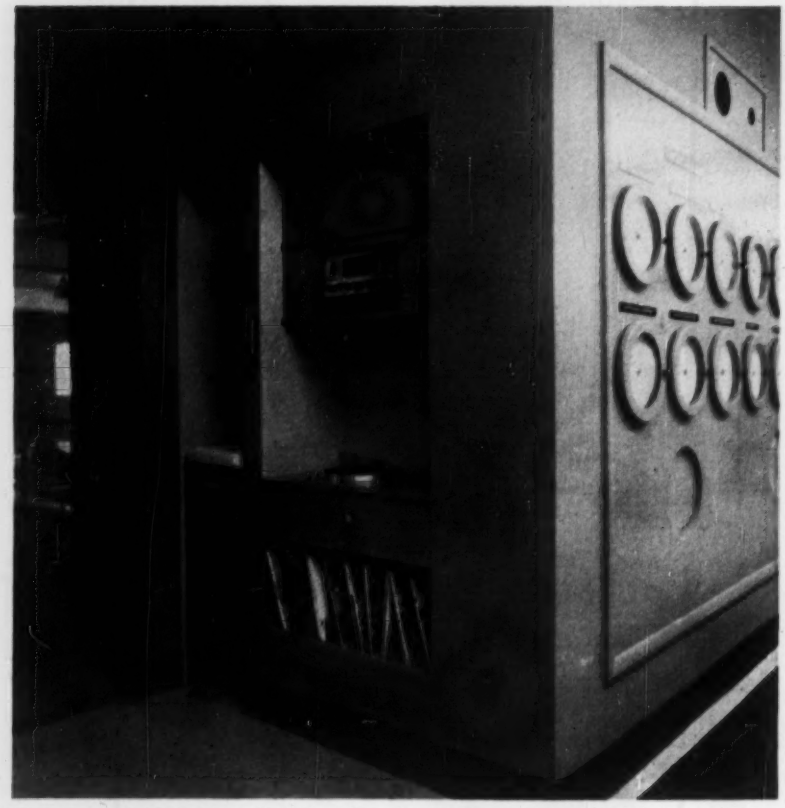
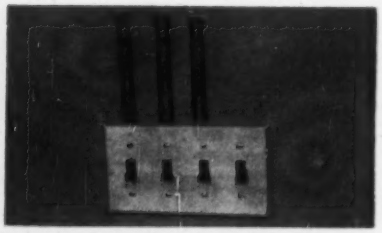
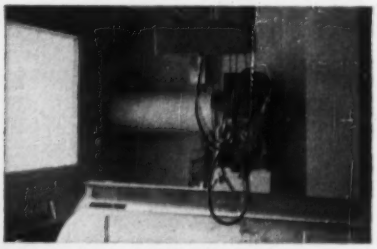
. . . The little things receive attention, too



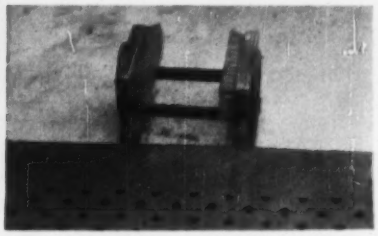
HI FI PHONOGRAPH, with loudspeakers throughout plant, was gift of designer Thomas M. Riddick of New York.



LIGHT SWITCHES throughout the plant are identified with permanent plastic.



CHLORINE CYLINDER weighing and moving is actuated by pushbutton device.



SHOE CLEANER occupies prominent position at entrance to plant.

heart of the plant's hydraulic control system.

A float that rides on the surface of the filtered water basin controls a 16 in. butterfly throttling valve on the plant raw water inlet line (which also is equipped with a motor-operated throttling valve and a motor driven shutoff valve, both butterfly type). Filtered water basin level fluctuates as a result of either of two operations: low lift pumping or backwashing.

During normal plant operation, filtered water flume and finished water basin are in the filled position, with plant inflow balanced to low lift pump discharge. Should low lift pumping rate change, say increase, the finished water basin is kept full by water entering from the filtered water basin through a 24 in. flap valve. The filtered water basin level is thus lowered and the float thereon opens up the main plant throttling valve. The increased inflow overflows the filter effluent flume to refill the filtered water basin.

During backwashing, the wash water pumps lower filtered water basin level directly and effect a similar increase in plant inflow rate. The motor operated throttling valve on the main inlet pipe limits any increase in plant inflow to 600 gpm, or a maximum increase in filter rate of 0.4 gpm per sq ft, until the filtered water basin is back in equilibrium. The filter loading is also increased 20% during the backwash period when plant load continues undiminished through the remaining five filters.

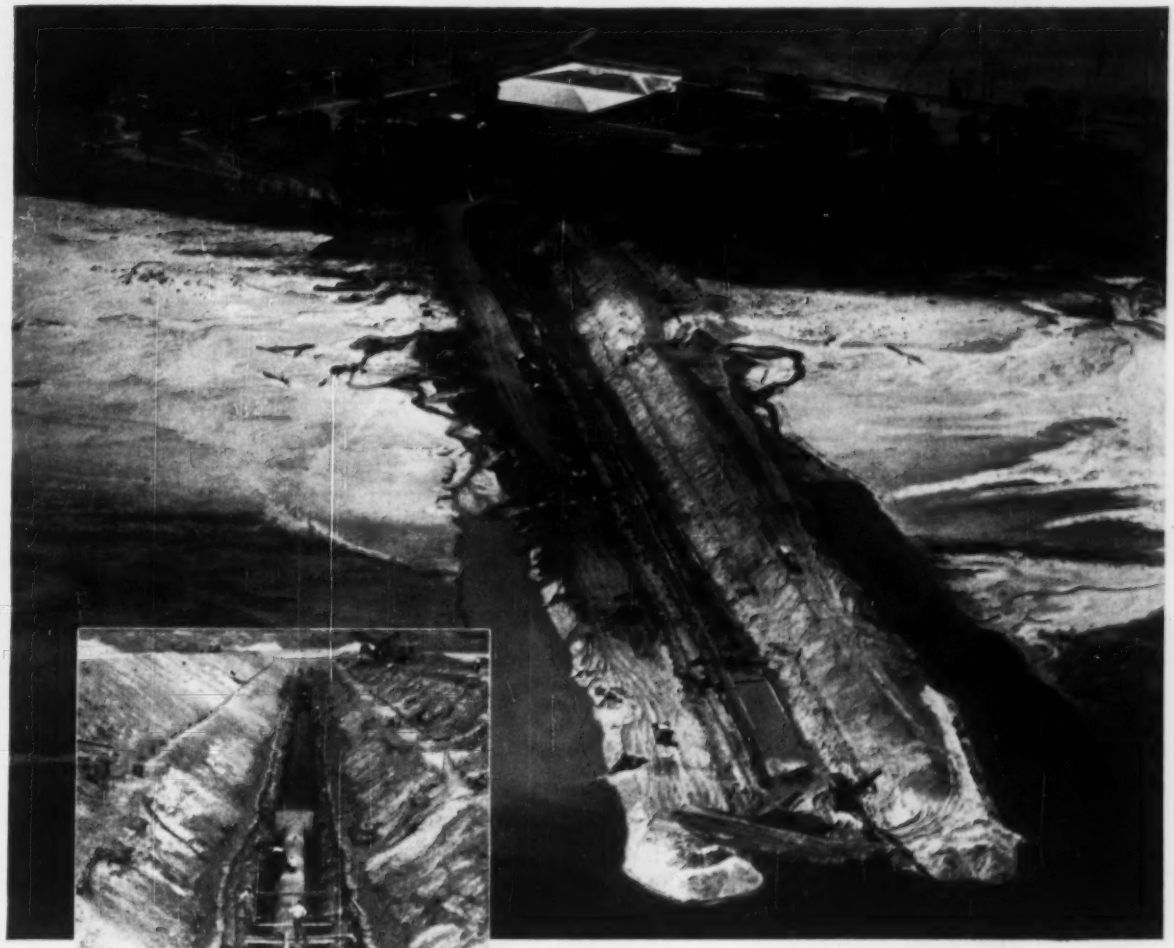
This backwashing system allowed backwash storage to be minimized in the design of the plant and permitted the filters to be located directly on undisturbed earth rather than in their usual position over the clear water basins. It was this feature, which also made possible placement of sedimentation basin and filter floor slabs on the same level and hence on the same continuous slab, that was considerably responsible for the plant's low unit cost.

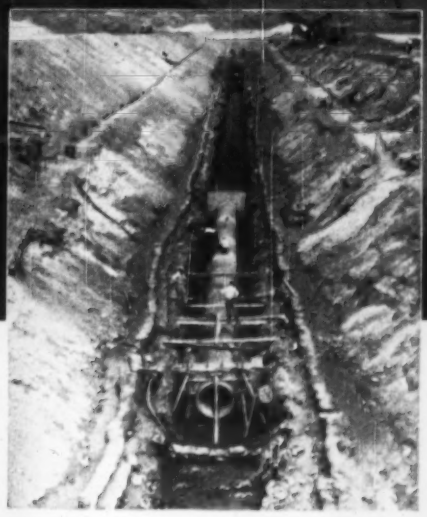
• **Controls**—The entire waterworks can be controlled from the main control panel. It is equipped with push button for (a) main inlet motorized throttling valve, (b) forced draft aeration, (c) raw water shutoff, (d) water to chemical feeders, (e) chemical feed motors, (f) flocculator drives, (g) master override for filter influent and effluent valves and (h) pumps for three service districts.

Oneonta's new plant also is outstanding from an appearance standpoint. Bright and harmonious colors and acoustic ceilings are apparent throughout. Even the concrete filter operating floor and exposed portions of the filters have been painted. The final touch is a high fidelity phonograph with loudspeakers throughout the plant, donated by the designer (from his royalty on the filter bottoms). Indeed, so rich looking is the decor of the plant (actually accomplished at modest cost) that some of the local citizenry are crying "gold-plate."

The layout of the plant conserves space by utilizing one wall of the main entrance lobby for the control panel and other portions of the perimeter as office space.

Henkels & McCoy, Philadelphia, was general contractor. Clarence M. Taylor represented Oneonta as director of public service, and he now has the responsibility of proving out Tom Riddick's innovations. Mr. Riddick has applied for patents covering the alum-calcite premixing arrangement and the recirculation of flocculator effluent.





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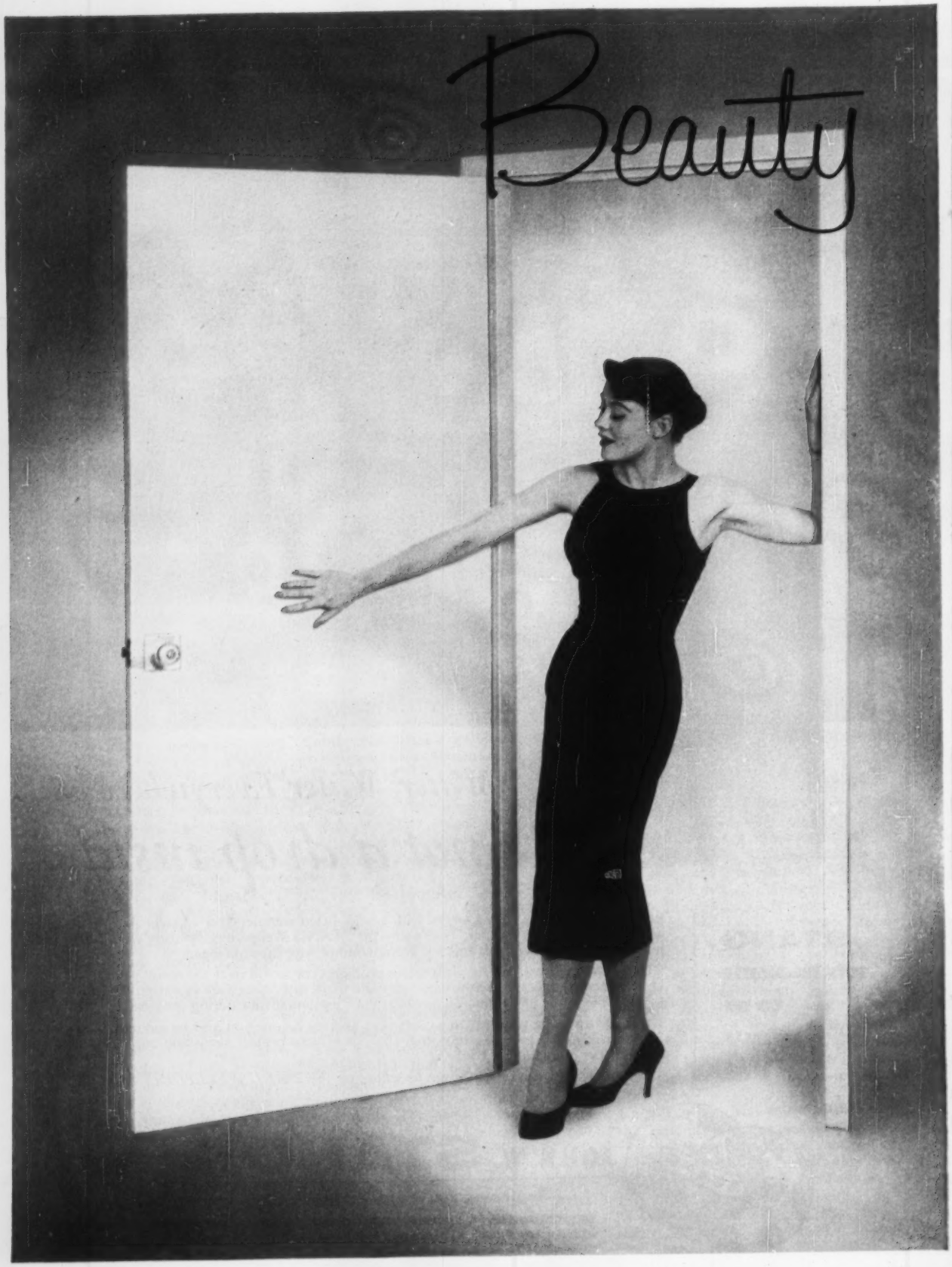
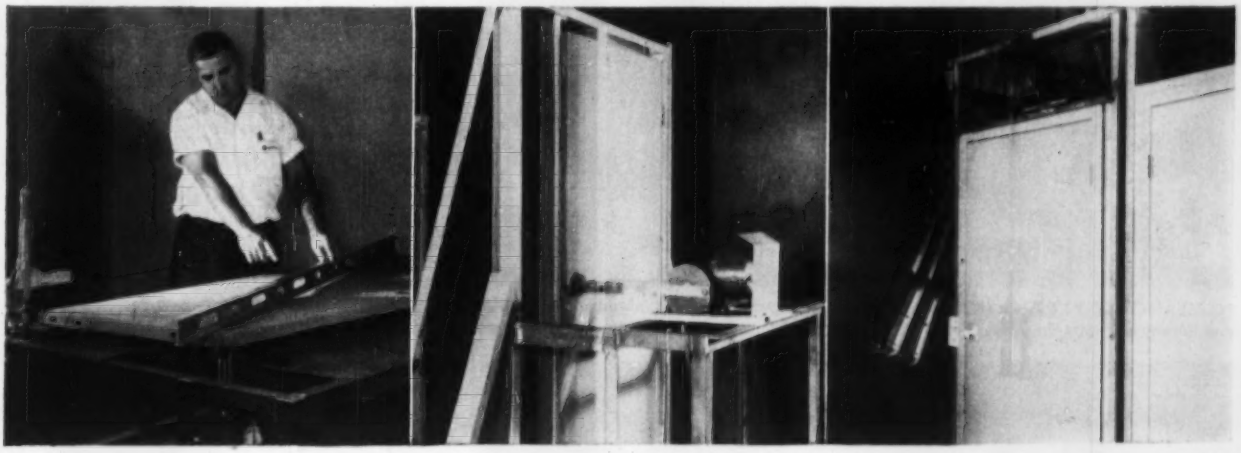

Beauty

and the Beasts



Twist! Here the "beast" (a jack) forces one corner of the door off the table until the insides begin to snap. The Fenestra Door took 240 lbs. of twisting pressure without damage! One *competitive* door snapped at 90 lbs., another at 130.

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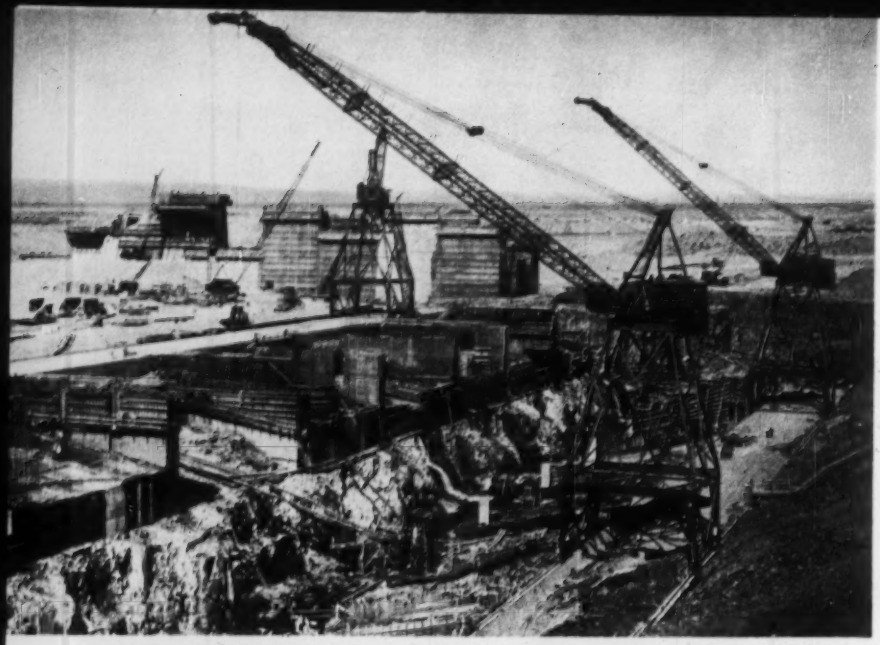
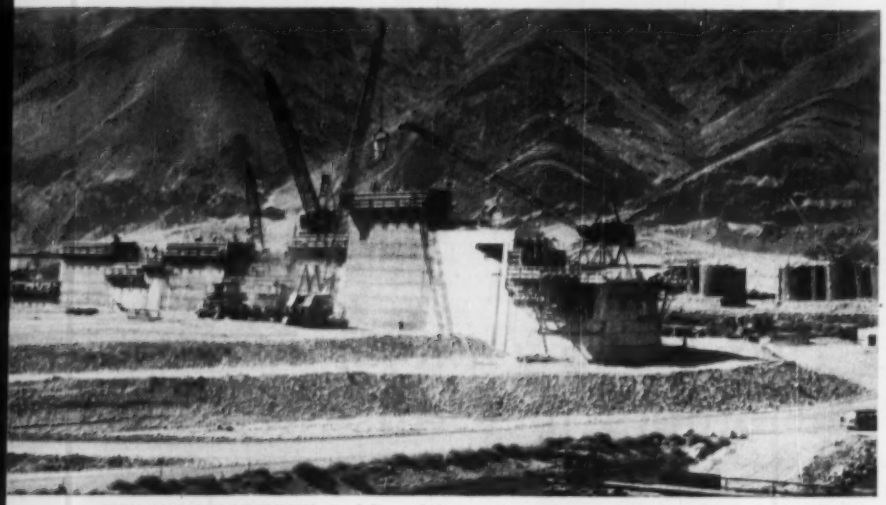
Priest Rapids

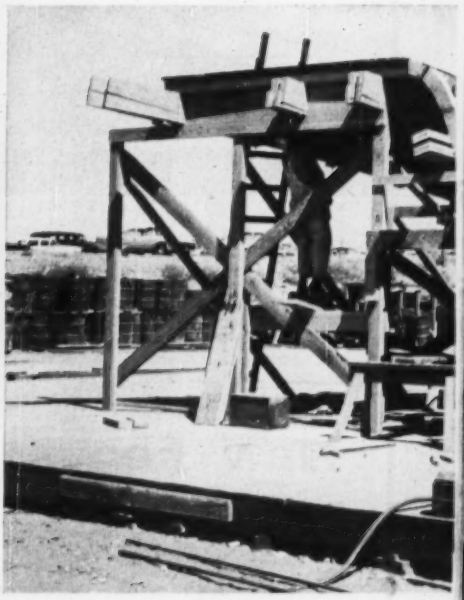
The second year of the four year Priest Rapids Dam construction schedule has seen the powerhouse begin to take shape as work starts on the spillway. The $92 million Merritt-Chapman & Scott contract is construction history's second largest.



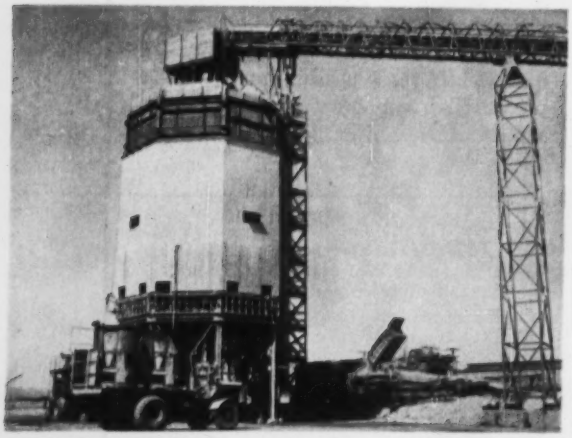
POWERHOUSE EXCAVATION at Priest Rapids Dam on the Columbia River nears completion as concreting progresses. High level cofferdam kept high water from this area.



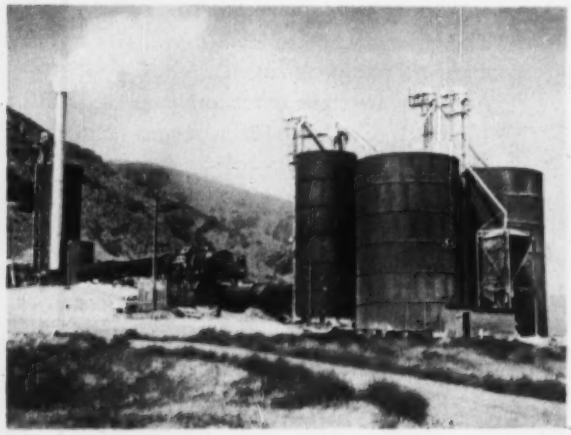
FISHWAY CONCRETE is delivered by truck in 4 cu yd buckets that are handled by crawler crane. Best progress has been made on this part of job.



WOOD FORMS are built for draft tube concreting. Sectional construction of forms



BATCH PLANT with two 4 cu yd mixers was previously used at Folsom Dam. Trucks handle buckets two at a time.



POZZOLAN PLANT uses rotary kiln to calcine natural volcanic ash. In concrete mix pozzolan replaces 25% of the cement.

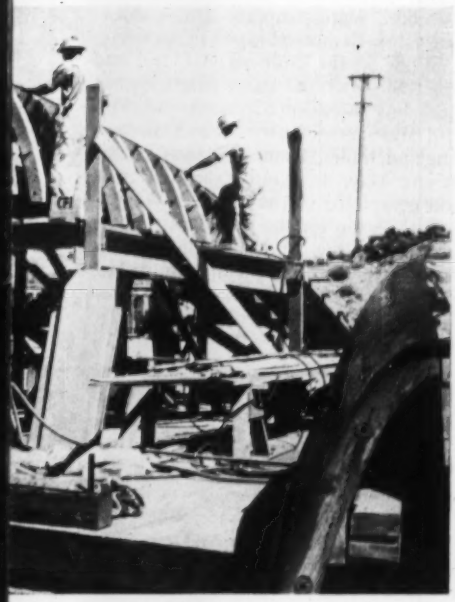
Takes Shape After One Year

Construction circles buzzed last year on award of what was then the largest competitively bid contract in construction history. There was amazement at the fact that a relatively obscure local public utility—Grant County Public Utility District—could arrange the partnership details of such a huge undertaking. And there was wonder at how a single contractor could undertake such a big job with no joint-venture partners. MC&S proved its bid was no fluke by bidding low on an even bigger job for its $108 million contract for Glen Canyon Dam.

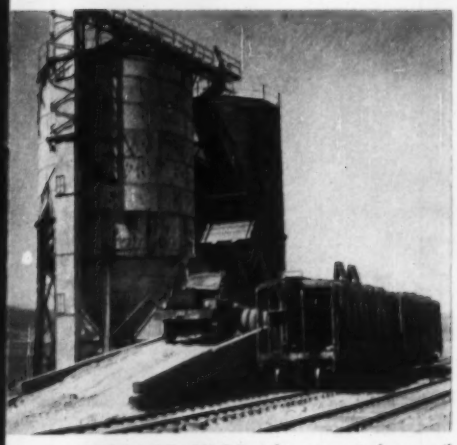
This month, with work on the 630,000 kw Priest Rapids project now well into the second year of a four year schedule (ENR Jan. 3, p. 36), major elements of the project are beginning to take shape. Inside a high level cofferdam that kept high-water flows out, powerhouse excavations have been completed and concreting is well under way. MC&S, taking a calculated risk, also built a low level cofferdam before the April-July high-water period that enclosed half of the spillway. The gamble proved worthwhile. The sheetpile cell cofferdam suffered substantial damage from high water, but it was repaired in short order when water levels subsided and an early start on spillway excavations was possible.

Powerhouse construction at Priest Rapids is a revolving crane job. The four big machines installed remove excavation, handle equipment, place forms and move concrete in 4 cu yd buckets. Other construction—including the fishway and spillway—is a crawler crane operation. In addition to the concrete portions of the work, the earth embankment wings have progressed. The 3,985 ft long left embankment is at original ground level after considerable excavation. And the 3,255 ft right embankment is nearly all excavated.

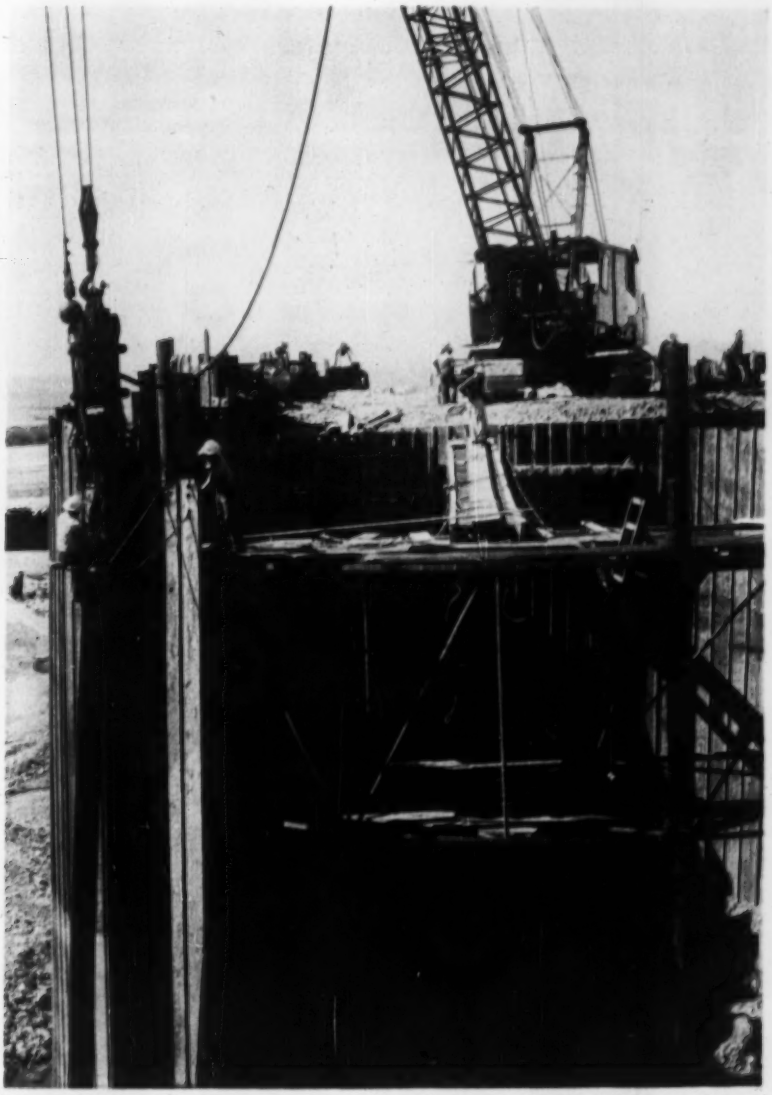
MC&S, under the direction of project manager Robert J. Jenks, has had as many as 1,600 men on the job at peak of summer employment. Harza Engineering Co., designers of the project, are represented on the work by Robert B. Jackson, resident engineer.



is used as the draft tubes are to be cast in several sections, not all at once.



STORAGE SILOS take cement from rail cars and pozzolan from trucks.



SHEET PILE CELLS between powerhouse and spillway area are removed after early summer high-water period. Cofferdam at lower level protects spillway area.

Bridge Gets New

To control rippling, shoving and breaking up of the asphalt under heavy New York-New England traffic, the decking on the Housatonic River Bridge, linking Merritt and Wilbur Cross Parkways in Connecticut, was stripped to the steel grid and replaced with steel plates topped by steel fabric-reinforced asphaltic concrete.

WORKERS CARRY 11½ by 8 ft sheet of welded wire fabric into position over spacer rods. Wires, on 3 in. centers are at right angles to bridge axis to help asphalt resist thrust of traffic.

The Housatonic River Bridge—joining the Merritt Parkway to the Wilbur Cross Parkway in Connecticut—has been resurfaced this year with a specially designed deck combination of heavy steel "bleeder" plates, capped with welded-wire fabric-reinforced asphaltic concrete.

Work on the multi-pierced steel and concrete structure, which forms a principal link between Stratford and Milford and carries heavy New York-New England traffic (Route 15), was started in late May, during the vacation rush, and completed in the fall.

The reason for the new deck was the breaking away and peeling of the previous bituminous-metal lath surface and the constant patching and repairing required.

WIRE FABRIC SHEETS are tack welded to spacer bars. Dark appearance of steel plates under spacer bars is caused by bituminous preparation, used as rust preventive.

FIRST COURSE of asphaltic concrete hot mix is layed by paver, over welded wire fabric on inner west bound lane. Purpose of the fabric is to control shoving, rippling and breaking up of the asphalt under heavy New York-New England traffic.

PAVER (right) lays first course of asphaltic concrete hot mix on outer westbound lane of Housatonic River Bridge, while 10 ton

Asphalt Deck Between Rush Periods

In the steel plate, steel fabric-in-asphalt combination, Connecticut State Highway Department engineers hope to arrive at a deck surface that will stay put and reduce maintenance. Successful performance of a similar 100 ft long test section installed in May, 1955, at the extreme west end of the east-bound lanes lends strong support to these hopes. (Other successful fabric in asphalt bridge installations in Denver, Colorado, Indianapolis, Indiana, and other cities further support the Connecticut bridge and paving specifications.)

When the Housatonic River bridge originally was opened in 1940, traffic ran on an open steel grid. But snow and ice formations as well as moisture rising from the river caused unsatisfactory traction on the deck creating a hazard and led to the first of several surfacings with plain bituminous material, backed up by metal lath.

• **Traffic problem**—The contractor, Leverty & Hurlock Co., and the subcontractor, DeFonce Construction Co., both of Bridgeport, Conn., faced and solved several problems in doing the work. A shortened work week was forced by the volume of weekend traffic. Work could not begin any week before 7 pm Monday, and all lanes had to be completely free of obstruction by 3 pm Thursday. This condition was met by dividing the entire job into sections, with every operation in each section started and completed during the week.

The only exception was the first step—stripping away the existing bituminous and metal lath surface from the grid. A scraper was used for this work, and the entire bridge length (1,906 ft) in the west-bound lanes was cleared the first week. For the duration of the job, traffic then ran on the open grid until the new decking went on, section by section.

• **Production schedule**—By working under lights and using production-line organization, the contractors arrived at average runs of over 500 ft for a week's work, from placing and welding the steel deck plates to paving the surface course of bituminous concrete.

The first step was installing "bleeder" plates, 1 ft by 3 ft, 14 gage steel plates, punched with 72 holes to allow for condensation. The plates which were furnished by the state, were perforated by the contractor and painted on both sides with a rust-preventive butiminous preparation.

The plates were secured to the underlying grid by means of 4 in. long welds that were made on 5 in. centers across the lane width.

In the next step, ⅜ in. square spacer bars were placed longitudinally along the lanes, on 2 ft centers, with extra bars placed where the paver's tracks were to travel.

The purpose of the spacer bars was to raise the welded wire reinforcing fabric up into the asphaltic concrete, where it stabilizes the mix most effectively. These spacer bars were tack-welded to the perforated plates every 12 in. on a staggered pattern for stronger ties.

The final operation prior to actual paving was placing and fastening the steel fabric to the spacer bars. The fabric, in sheets 11½ ft wide by 8 ft long designated 3x6-10/10 (3 by 6 in. spacing, of 10 gage cold drawn wire), was positioned so that the 3 in. spaced wires were at right angles to the axis of the bridge. In this position, the fabric acts more effectively to stabilize the asphalt and to resist the "shoving" action of traffic. This reinforcement of welded wire helps control rippling and breaking up of the road that is constantly being pounded under the wheels of heavy parkway traffic.

The fabric was welded to the spacer bars at 6 in. intervals, on a staggered pattern, and the ends of all transverse wires were tacked to the 14 gage plate at both curb-sides. Lapping of the sheets of fabric was not considered necessary. The butted sheets, fastened to the spacer bars, provided sufficient continuity of reinforcement.

• **Welding in quantity**—With all the welding required for the foregoing—plates to the grid, bars to the plates, fabric to the bars—log jam of work might have resulted without careful, detailed planning. The sub-contractor, therefore, further sub-let some of his work to Mumac Corp. of Stratford in order to compelete on time the tightly scheduled work load. Between the two subcontractors Mumac and DeFonce, both welding specialists, as many as 12 welders often were working simultaneously.

Much of this work was done under lights, and sometimes, due to inclement weather, under tarpaulin shelters.

An hourly progress of five feet of 24 ft wide lane was achieved by the work crews for all steel and welding operations.

After solving the problems of mass production and determining how much work to attempt in a week, Leverty & Hurley then moved to its prime responsibility of actually placing the pavement—usually arriving at this stage of the work by Wednesday night or Thursday morning of each week. A paver was used to lay both base and surface course.

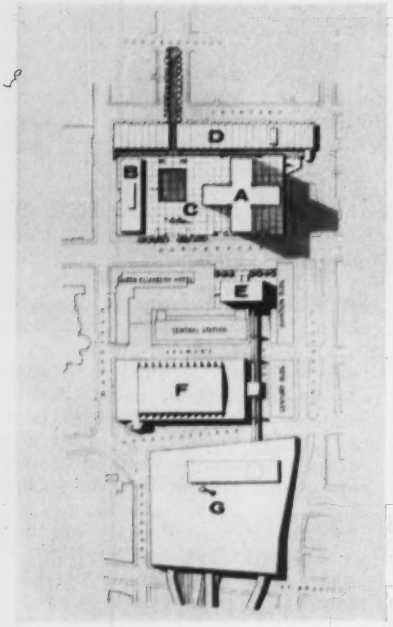
The mix, known as Connecticut 1-21-F, dense graded bituminous concrete, had a synthetic rubber additive. Both first and second courses were identical as far as composition was concerned. The base was 1¾ in. before compaction, tapering to ¾ in. at the edge; the top, 1¼ in. thick, tapering, with a maximum roadway crown of 2⅞ in.

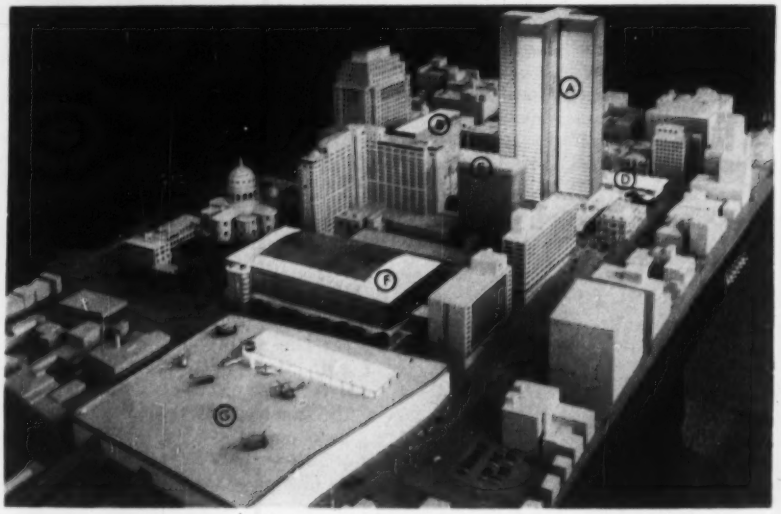
A 10 ton tandem roller was used for compaction.

The unusual deck, fabric-asphalt combination was designed by Connecticut Highway Department engineers after experimentation with several methods of deck resurfacing. Cost of the project was $144,000.

Ray Mallon, Fairfield County resident engineer, and Marvin Rapp were state highway engineer representatives in the field. Field superintendent for the contractor, Leverty & Hurlock, was George Stapleton.

tandem roller compacts inner lane. At the left, traffic in both directions is maintained over the bridge's eastbound lanes.





Planned for construction within the next five years around Central Station in Montreal are (A) a 40 story cruciform-shaped office building, (B) a 15 story office structure, (D) a row of shops and a theatre surrounding (C) a plaza reserved for pedestrian traffic. Future development calls for a (E) 20 story office building, (F) 5 story office building with 900 car garage beneath, and (G) a transportation center including heliport, bus terminal and parking garage.

Montreal Terminal Area to be Improved

The Canadian National Railway and Webb & Knapp (Canada), Ltd., have agreed on a detailed plan for long range development of the CNR terminal area in downtown Montreal. The plan was formulated by Webb & Knapp and embraces three city blocks around the railroad's Central Station.

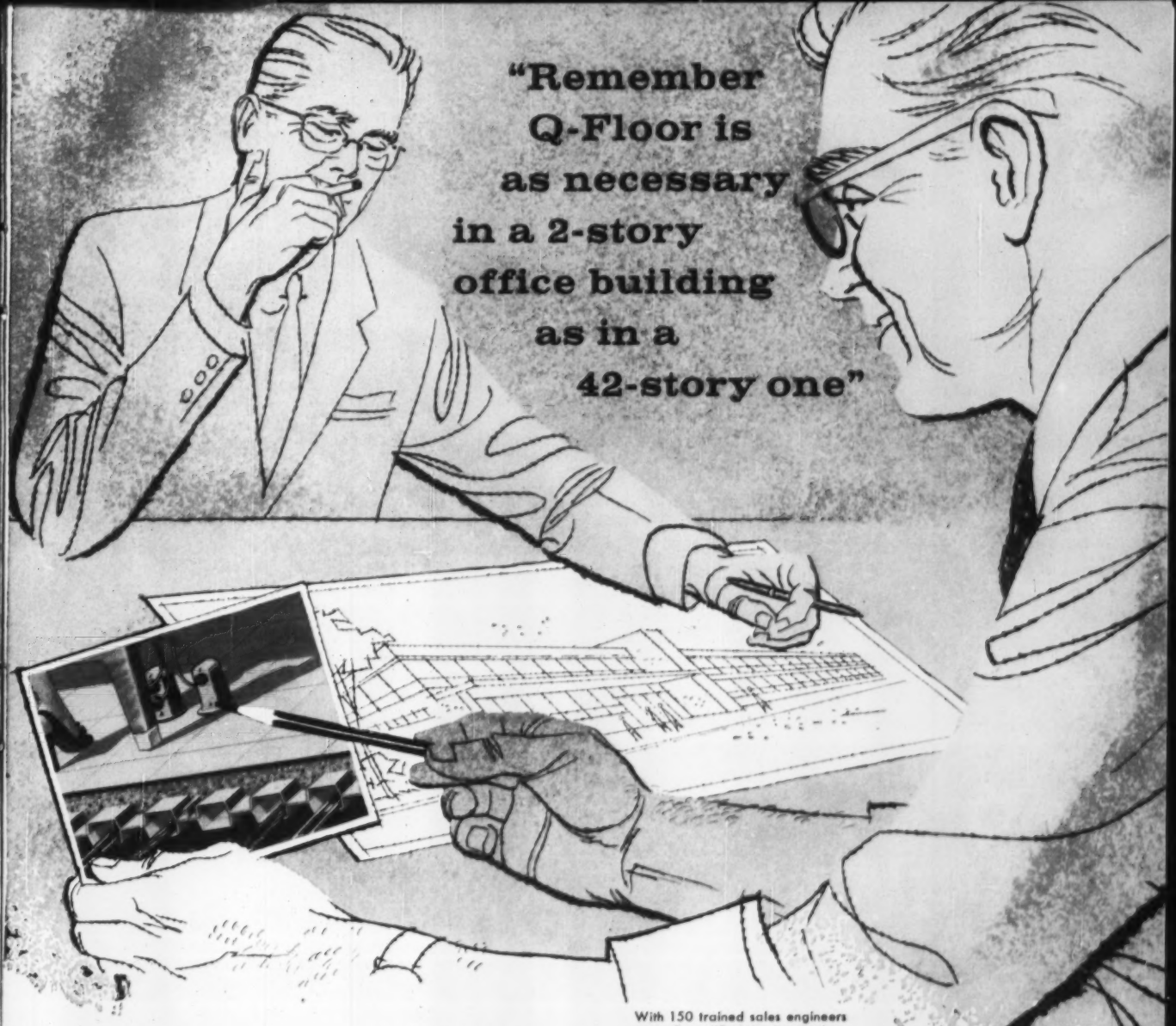
Under the agreement Webb & Knapp will lease about one-third of the area's 21 acres for immediate development. Within five years Webb & Knapp must have substantially completed a cruciform-shaped 40 story office building, a 15 story office structure and a row of shops and a theatre, all bordering on a spacious plaza reserved for pedestrians.

The 40 story building will be Canada's largest and tallest. It will have 1.5 million sq ft of space above ground, and there is an additional underground potential of 2 million sq ft. Webb & Knapp will begin on construction plans and specifications immediately. First bids will probably be taken in about six months.

Webb & Knapp is not committed to future proposed construction in the remainder of the area. In the two block area south of the Plaza a 20 story office building will be erected. This structure will be located next to the new Queen Elizabeth Hotel, which is expected to open early in 1958. A large 5 story railway headquarters building and a 3 story transportation center will occupy the block south of the office structure.

The master plan was prepared by I. M. Pei & Associates, New York architects, in conjunction with CNR architects and Montreal authorities. Henry N. Cobb and Pershing Wong are the architects in charge. V. de Pasciuto-Ponte is the town planner.

(*International continued on page 47*)



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WIRE ROPE AT WORK

This is a good trick if you can do it, and these four hard-rock men have it mastered. Suspended by means of wire rope above the chattering Cowlitz River, they are shown drilling bolt-holes at the site of the Mayfield Dam in southwest Washington. A project of Tacoma City Light, the dam will be 850 ft long and 185 ft high when completed.

Wire rope has numerous assignments on any big construction job, though not all of them are as spectacular as the one in the photograph. At the Mayfield Dam project, Bethlehem Purple Strand rope has seen service in many different ways; it has been one of the busiest items of equipment. And as always, Purple Strand has proved itself wholly reliable, day after day, in the heaviest, toughest kinds of lifting and hauling work.

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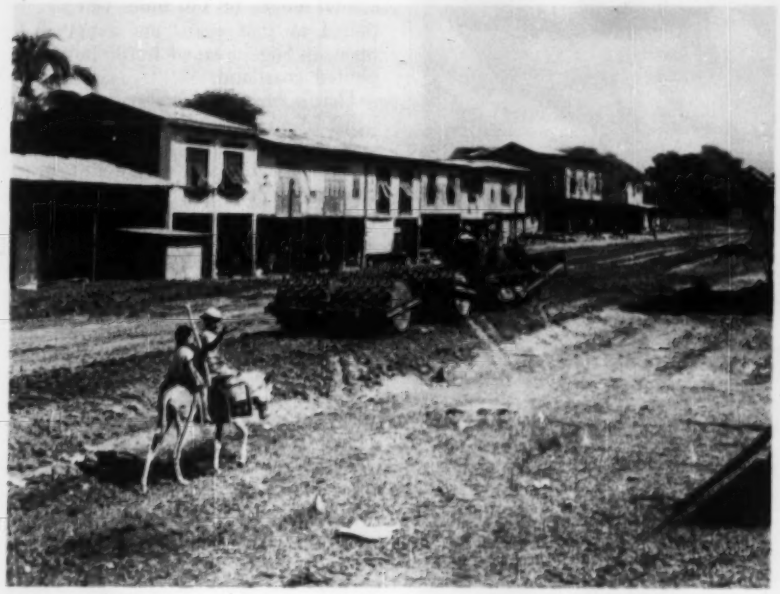
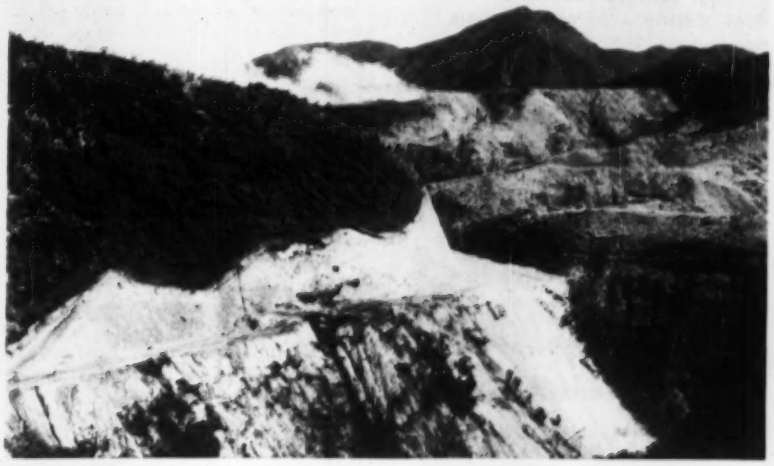


NEW HIGHWAY through Pedro Carbo, in the Province of Guayas, is being built to stimulate Ecuador's economy by granting access to large areas previously isolated.



ANOTHER ROAD, west of Quito, will be continued to link Quito with the port of Bahia de Caraquez, making possible all-weather transport between the area and the coast.

Ecuador Maps Four Key Highways

Ecuador—moving another step forward in improvement of its national highway network—will construct four key roads and carry out a four year maintenance program with the aid of a World Bank loan amounting to $14.5 million.

At present, the country's highway network totals 2,000 miles of primary and secondary roads. Of this, only 200 miles are asphalted, while 430 miles are cobblestone and the rest are gravel roads in poor condition because of lack of maintenance.

The new program calls for completely reorganizing maintenance operations to provide an effectively staffed and equipped organization. District maintenance centers will be set up, workshops and warehouses established, new equipment purchased, and a training program initiated for operation and maintenance of equipment.

The four new roads, which will have

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a total length of 330 miles when completed in four years, are designed to open up large areas of fertile but unexploited coastland.

Here's how the projects' routes are being planned:

• The longest road, 145 miles, will provide a vital link in an all-weather route between the populous mountain area around Quito (the capital) and Guayaquil, Ecuador's largest city and chief port. The stretch from Guayaquil and Quevedo, where the project will start, already has been put in good condition, partly with the help of a World Bank loan of $8.5 million made in 1954 for highway improvements in the province of Guayas. The new road, running from Quevedo to Quito via St. Domingo and Aloag, will traverse flat rolling country at a low altitude over most of its length, then will climb 10,500 ft through the lowest pass in the Andes and continue on down to Quito at about 9,000 ft.

• The second road runs from Duran, a town opposite Guayaquil on the Guayas River, to Cochancay at the foothills of the Andes. It forms part of the highway connection between Guayaquil and Cuenca, Ecuador's third largest city, and will be the main artery for branch roads now being built in other parts of Guayas Province. Work to be undertaken on this road is mainly reconstruction.

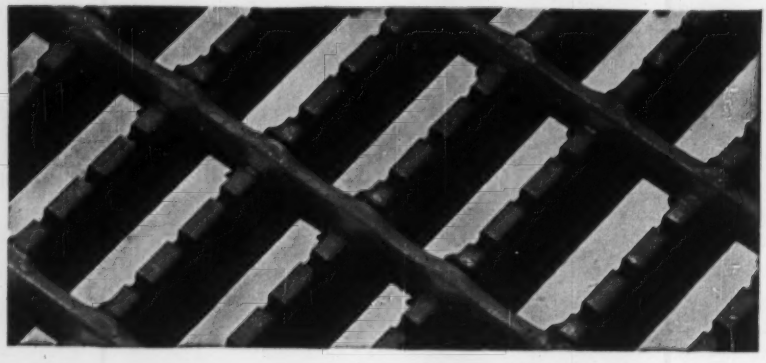
• The third road, 30 miles long, will be built from Chone to Bahia de Caraquez, a port town on the Pacific coast.

• The fourth road, which will run 100 miles from Chone to St. Domingo, will be built when work on the others and on the maintenance program has progressed satisfactorily.

Both programs—road construction and maintenance—will be carried out by Ecuador's Department of Public Works, with the assistance of engineering consultants who will be retained by the government.

Total cost of construction work is estimated at $24.7 million. Part of the bank loan—$11 million—will pay for necessary imported goods and services. Total cost of the maintenance program is estimated at $7.4 million, and an allocation of $3.5 million from the bank loan will pay for the import of new equipment, spare parts for reconditioning existing equipment, tools and materials for repair shops, warehouses and offices, engineering fees and a small share of the cost of the training program.

Local currency cost of the programs will be met by the government, about 60% of it slated to come from an existing gasoline tax.



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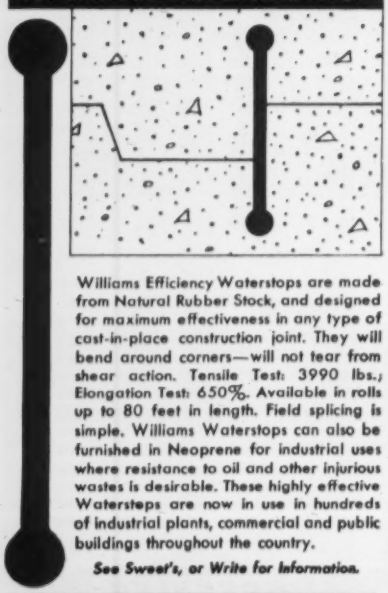

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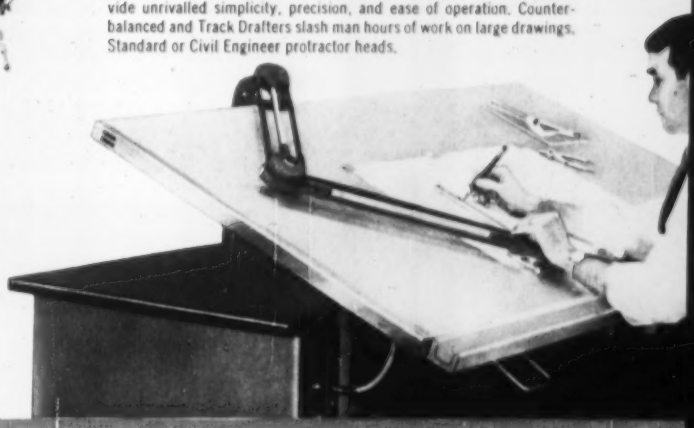

MODERN BRUNING TRACING MEDIUMS SPEED DRAWING AND REPRODUCTION

These new, improved drawing mediums are unsurpassed for translucency, pencil-and-ink taking qualities, workability, permanence. You'll draw easier and faster; get cleaner, sharper prints, in record time.

Just Out! New "Visi-Vel" resin-transparentized tracing paper offers up to 25% faster reproduction speed!

MODERN HAMILTON DRAFTING TABLES REDUCE WASTE MOTION AND FATIGUE

Unique design of Hamilton Auto-Shift lets draftsman work on any part of the board, reach reference table and drawers without leaving his seat. And you can put six Auto-Shift tables where you now have four boards with separate reference desks.

MODERN COPYFLEX MACHINES AND SENSITIZED PAPERS, CLOTHS AND FILM

Speed Reproduction! New, advanced Copyflex models bring you faster reproduction speed and a host of operator conveniences such as fast return of originals, automatic separation, front or rear delivery. And all the benefits of diazo black-on-white reproduction, plus problem-free operation and installation. No fumes, no exhaust ducts. There's a Copyflex model to meet every need and budget. New, better Copyflex sensitized materials work together with Copyflex machines to speed reproduction, give you premium results.

Slash Re-Drafting Time! Save up to 90% tracing time by making modern Copyflex intermediates (translucent prints) of drawings to be re-worked. Mask out unwanted portions before reproducing the intermediate, add new lines or sharpen up weak lines on the intermediate itself, produce sharp, clear prints from the intermediate.

New Table Top Model 300

New Low Cost Model 35

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HAMILTON WOOD FILING UNITS

Combine exactly the interchangeable units you need—in higher stacks—to save time and space. Sturdy oak construction.

PLAN HOLD FILING EQUIPMENT

Save time, space, and damage in filing large active plans. Spring-loaded, clamp-style binders eliminate punching, stapling, bolting or folding of plans. Binders are easily mounted in wall racks, floor stands, cabinets. A binder holds up to 150 plans.

MODERN HAMILTON ALL-STEEL UNITSYSTEM FILES SAVE TIME, SPACE; PERMIT ORDERLY EXPANSION

You file drawings and records in units especially designed for them by size and frequency of use. Drawings are easier to file and find, which saves time. UnitSystem's interlocking feature lets you combine exactly the units you need—in higher stacks—which saves space. It lets you expand your filing set-up gradually, efficiently, and economically.

GIVES YOU MORE TO HELP SAVE MAN HOURS . . . ADD MANPOWER TO YOUR DRAFTING ROOM . . .

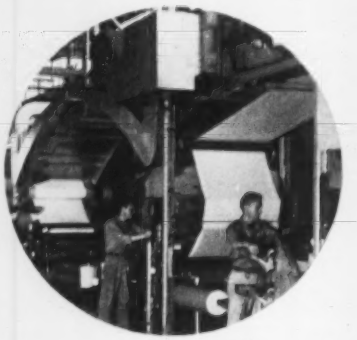
3 more reasons why you can depend on Bruning to help you

Save Man Hours...Add Manpower to Your Drafting Room!

Researcher, manufacturer, and supplier . . . Bruning saves you many man hours by providing a single, convenient, dependable source for everything you need in top-quality drafting room supplies and service. You simplify ordering and stocking, save time and money. You get the following important benefits!

New and Better Products— from Bruning Research and Engineering

Bruning Research and Engineering has introduced such great time-and-work savers as the first pencil tracing cloths, the first fume-free whiteprinters in America, the first band-type drafting machines. Today, by virtue of its modern laboratories and large engineering staffs, Bruning still leads the way. In just the last two years, Bruning has introduced five new, advanced reproduction machines, many newly improved tracing materials. You can count on more new and better products coming to help you save man hours, add manpower.



Consistently High Quality —from Bruning Manufacturing

In its own modern paper converting plants at Teterboro, N.J., Chicago, Kansas City, Los Angeles, and Toronto, Ontario, Bruning controls quality all the way to bring you tracing mediums and sensitized materials of dependable, consistent high quality. The famous Copyflex reproduction machines are entirely Bruning manufactured to provide you the finest in reproduction performance. You get better results, minimize the risk of trouble and loss of man hours.

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You suffer no costly delays—no loss of man hours—for lack of supply or service. With the most comprehensive network of sales-service branches, distributors, and plants in its field, Bruning assures you of prompt, dependable service and supply.

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Right now is the time to capitalize on Bruning's great time-and-work saving products and Bruning's outstanding service and supply. They work together to help you save man hours—add manpower to your drafting room, now when you need it!

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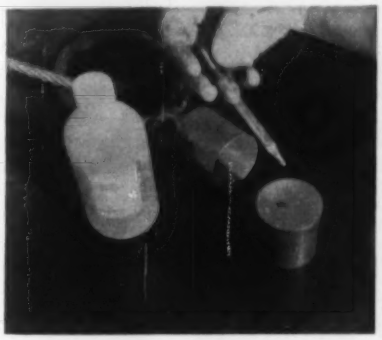


One drop of new adhesive placed between 2 in. dia steel rods develops, in a half-hour, without application of heat or pressure, a bond strength sufficient to lift a 5,000 lb load.

New Adhesive Has High Bonding Strength

Tensile bonding strengths as high as 7,230 psi have been obtained with a new high-strength adhesive that sets in seconds. The bonding material, produced by Eastman Chemical Products, Inc., is called Eastman 910 Adhesive. It is a cyanoacrylate monomer modified with a thickening agent and plasticizer.

Heat, pressure, long curing times or solvent evaporation are not required with the new Adhesive. When pressed into a thin sheet film between the surfaces to be bonded, a polymerization reaction takes place, resulting in the rapid set.

The chemical solidifying reaction occurs without appreciable volume change. This is given as the probable reason for the strong bonds formed.

Tests show that the adhesive will bond with almost every kind of material, but it sets quicker between hard, smooth surfaces than between porous or rough surfaces. Setting occurs in less than 5 seconds between steel and neoprene; 5 to 15 seconds between glass and glass; and 3 to 5 minutes between wood and wood.

Bond strength increases after the initial set. For steel-to-steel, bond intension was 2,005 psi after 2 hours and 5,030 psi after 48 hours.

The adhesive is stable under normal temperature and moisture conditions. However, prolonged exposure to temperatures of 100C or short exposures at higher temperatures break down the bond.

Steam, combinations of high humidity and high temperatures and weak alkaline solutions also affect the bond considerably.

The adhesive, in limited production at present, is available in 1 oz sample kits at $5 each. One-half, 1 or 2 lb bottles also can be ordered. Eastman Chemical Products, Inc., Kingsport, Tenn.

Slide Rule Is Designed For Water Calculations

A slide rule is offered to reduce the time of calculating pressure and open channel flow problems.

One side of the 13 in. rule is used for flow in pipes up to 100 in. in diameter running full. Scales are provided for flow, diameter of pipe, head loss and length of pipe; when any three of these factors are known, the fourth can be found rapidly with a minimum of calculation. There is also a scale for determining the velocity of the flow. Further on this side of the rule—calculations for which are based on the Hazen-Williams formula for flow of water in pipes—the same information may be found for pipes and sewers running partly full.

The other side of the rule is used for calculations of flow in open channels. The scales on this side are for velocity, hydraulic radius, slope of channel and Kutter's constant. The Manning formula is used for calculations on this side of the rule.

Scales on both sides of the rule—called the Tarrant Hydraulic Slide-Rule—are printed in black in English units with equivalent metric units printed in red. Patterson Engineering Co., Ltd., Windsor House, Kingsway, London, W. C. 2.

Tape Sticks to Itself But Not to the Touch

Silicone rubber tapes that don't stick to the touch but stick to themselves by applying pressure, are manufactured from a "fusible" silicone rubber developed by Union Carbide Corp. One compound of this new family available for fabricators is K-1605R Fusible Silicone Rubber Compound, a general-purpose insulating tape. A second member of the fusible compound series, which conducts electricity, also has been developed and is scheduled to be in production soon.

The tapes can be unsupported or supported by glass fibers or other synthetic fabrics, or other rubber. The fusible compounds can be extruded, calendered or molded into a variety of shapes.

One of the features of the compounds is their resistance to reversion or loss of hardness, when heated while sealed or otherwise confined. Tapes made with the new compound can be fully cured prior to use. When wrapped on themselves, as in the construction of an electric cable, the tapes adhere on contact. Actual fusion of the rubber occurs slowly at room temperatures; application of heat or pressure will greatly accelerate the fusion into a solid mass. To provide a non-sticking surface, the parts after fabrication may be dusted with mica or silica. Silicone Div., Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.

(*New Products continued on page 54*)

Submersible Pump Built To Handle 20% Solids

A submersible drain pump has been designed to handle water containing up to 20% solids. The pump may be operated either partly or completely submerged.

The pump's three-phase 60 cycle motor is rated at 7½ hp. The single-stage centrifugal type pump has a closed impeller mounted directly on the motor shaft. A built-in thermostatic cut-off protects the motor against damage from overheating, obstructions or overloading.

An automatic reset restarts the pump when obstructions are removed or overloading is relieved. A ⅜ in. mesh stainless steel screen protects the pump inlet.

The pump is claimed to have a capacity of 460 gpm at 15 ft head, and 145 gpm at 70 ft head.

The unit weighs 238 lb and is recommended for portable service or permanent installations. SUMIO PUMPS, INC., 23 BROWN HOUSE ROAD, STAMFORD, CONN.

Tractor Offers Better Trailer-Truck Maneuvers

Three new International diesel truck-tractor models with short bumper to back of cab dimensions—90 in. to rear top of cab, 91⅝ in. to farthest point at back of cab—have been introduced for heavy-duty highway hauling.

They are the four-wheel model AC-225-D, with 30,000 lb GVW rating and GCW rating of 68,000 or 76,000 lb depending upon rear axle and transmission specifications; and the six-wheel ACF-195-D and ACF-205-D models, both with 40,000 lb GVW rating and GCW rating of 70,000 lb.

Each of the units offer a selection of diesel power plants in the 175 to 220 hp range.

When a trailer is in jackknife position, with the corner at its closest point to the cab, there is additional clearance at the top of the cab, allowing for tilt between tractor and trailer without "cornering" the cab where the units are close coupled or where terrain is not level.

Both the four-wheel and six-wheel models are available in four wheelbases.

Maximum possible accessibility to the engine for servicing is provided by the enlarged cowl opening. This is augmented by the engine tunnel's removable cover with quick-release latches; a removable panel next to the instrument cluster permitting easier access to rocker arm covers or cylinder heads; and direct, easy access to the fuel pump via a plate on the cab floor. INTERNATIONAL HARVESTER CO., 180 N. MICHIGAN AVE., CHICAGO 1, ILL.

Heavy Media Separator Now Ready for Aggregates

A new, compact, heavy media separation plant, pre-assembled at the factory into four connected units, is now available. These units or block sections are said to provide for easy assembly at the installation site and can be readily transported from deposit to deposit.

The plant features the OCC Separatory Vessel, which has been used in mining and is now available to the sand, gravel and crushed stone industry.

The large productive pool area of the vessel, plus constant hydraulically actuated raking mechanism, provide maximum separation of deleterious matter and high output of recovered aggregate. Capacity of the plant ranges from 25 tons per hour and up, depending upon the problem.

Other features include an improved screw densifier, a magnetic separator, ground level sump and a control panel on the upper deck. EAGLE IRON WORKS, 187 HOLCOMB AVE., DES MOINES, IOWA.

Jungle Smasher to Clear Virgin Lands

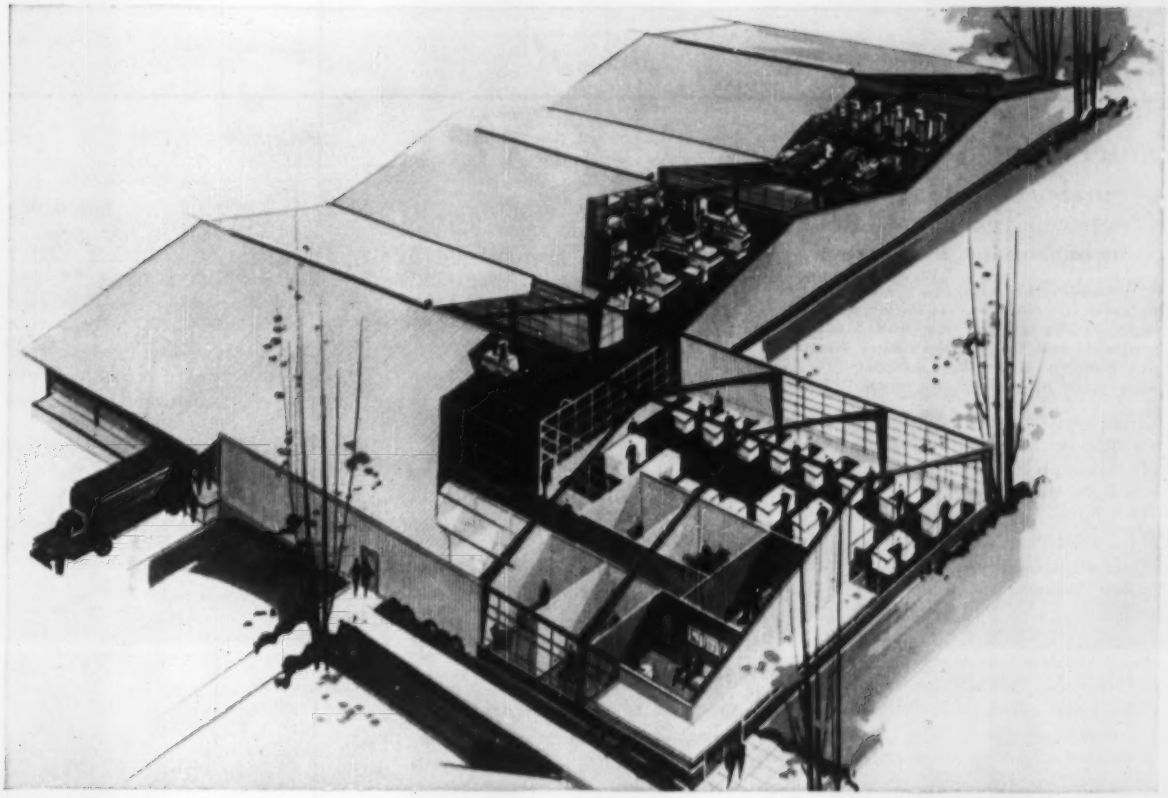
Labeled as the "electric tree crusher," one of the world's largest machines was unveiled recently by R. G. LeTourneau, Inc., of Longview, Tex.

In operation, the machine behaves much like a gigantic roller, except that it is many times heavier and much more destructive. Working its way through a jungle, it leaves a 20 ft path of matted pulp and splinters. The machine weighs more than 280,000 lb, and can clear an acre of land in 15 minutes. It has wrecked oaks that are 12 ft in outside circumference.

The machine is 74.3 ft long, 22 ft wide, 19 ft high, and has rollers with a 9 ft diameter. Extending from the rollers are more than 300 heavy steel cleats, shaped much like a conventional ax blade.

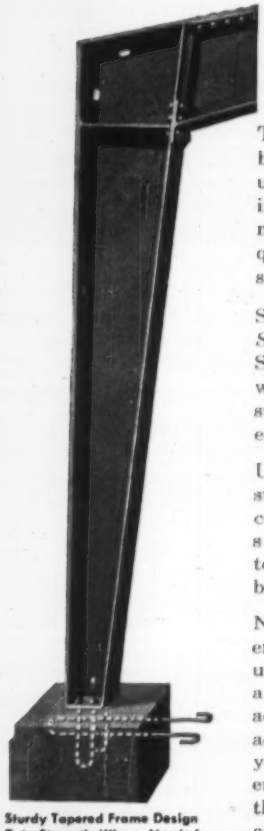
When the machine moves against big trees, the front roller climbs the trunks until it has leverage enough to push the trees over. As the tree crashes down, the machine's teeth dig in and cut the trunk into match wood.

Basic use for the machine is in clearing jungle areas so they can be turned into food producing sections. R. G. LE TOURNEAU, INC., LONGVIEW, TEX.



Manufacturers get rugged, clear-span design, attractive *Stran-Satin* walls

with NEW STRAN-STEEL BUILDINGS



Sturdy Tapered Frame Design Puts Strength Where Needed

The open, clear-span design of Stran-Steel buildings makes them ideal for the optimum use of machinery, manpower and materials in manufacturing operations. In addition, new Stran-Steel buildings have a look of quality never before achieved in an all-steel structure.

Start with the smart *Stran-Satin* finish. *Stran-Satin* metal wall, exclusive with Stran-Steel, provides a strong, durable exterior with the weather resistance of zinc-coated steel. Peaks, gables and eaves are completely enclosed with smart fascia flashing.

Under this attractive exterior is a rugged steel structure. At the peak and knee, the continuously welded rigid frame I-section steel plate beams are securely bolted together. Each frame is also permanently bolted to the foundation.

New Stran-Steel buildings are quickly erected at minimum cost, provide clear, unobstructed space for large equipment, and may be provided with such required accessories as overhead craneways or large access doors. With Stran-Steel buildings, you get the cost-saving features of a pre-engineered structure in a quality building that is fire-safe and easy to insulate. They are available in any length, with widths of 32, 40, 50, 60, 70, and 80 feet, and multiples thereof.

The Stran-Steel Purchase Plan can be used to finance these buildings. As little as 25% initial investment; up to 5 years to pay. Ask your Stran-Steel dealer for the complete story. He is listed in your classified telephone directory under "Buildings—Steel."

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Court Bars Tax Lien

Surety is held to have superior claim to fund owing under a contract

A contractor who has failed to perform his contract has no property right in the money due under the contract, and the United States can not acquire a tax lien against the money for unpaid income taxes.

This was the ruling in a federal case that arose in New York on a New York City Housing Authority project. The facts were these:

On June 21, 1949, Caruso-Sturcey Corp. contracted with the New York City Housing Authority to install heating and ventilating facilities on a housing project. The contract required the contractor to furnish a performance bond also a bond to secure payment for laborers and materialmen. The contractor complied with these provisions of the contract.

When the heating and ventilating facilities had been installed and accepted by the owner on Mar. 1, 1952, there was an unpaid balance on the contract, amounting to $46,392.31. The principal claimants to this fund were the surety, Fidelity and Deposit Co. of Maryland, which had made payments for labor and materials aggregating $75,650.09, as required by its bond on the failure of the contractor to make such payments when they were due, and a claim on the part of the United States by reason of tax liens for withholding taxes retained by Caruso from the wages of its employees, but not turned over to the government.

The fund was awarded by the court below to the United States on the theory that the defaulting taxpayer, Caruso, under its contract, had a conditional right to the fund, and that this right was a "right to property" within the meaning of Section 3670 of the Internal Revenue Code of 1939, 26 U.S.C., and that the United States thus had a valid tax lien on the entire fund. The appellate court, however, held that since the contract provided that the contractor would not be entitled to the final payment until it had furnished proof that all claims for labor and materials had been paid, and it had defaulted in making all such payments, the contractor had no right to such fund and the government had no lien on the same.[1]

The appellate court referred to a recent case in the New York Court of Appeals[2], where a similar situation was involved. There, the court held that so long as claims of materialmen and laborers were outstanding and unpaid and so long as the owner had the right to withhold the final payment to pay for labor and material, the contractor had no rights to the fund and had no property interest therein upon which the government could place a lien. In that case, the court stated: "A failure by the contractor to pay for labor and material was just as much a failure to perform and carry out the terms of the contract as an abandonment of the work would have been."

(1) Fidelity and Deposit Co. of Maryland v. New York City Housing Authority, 241 F. 2d 142, U. S. Court of Appeals, Second Circuit, Feb. 8, 1957.

(2) United States Fidelity & Guarantee Co. v. Triborough Bridge Authority, 297 N. Y. 31, 74 N.E. 2d 226.

Legal Duty to Furnish A Safe Place to Work

Although the owner and the contractor each has a legal duty to provide the contractor's employees with a safe place to work, the owner may escape liability by showing that his instructions were countermanded by the contractor or that his conduct did not amount to actionable negligence.

In a recent New York case, a construction worker employed by a contractor on a municipal sewer was injured when he unknowingly broke through the bulkhead of a live sewer. The lower court ruled that the city had constructive notice of the dangerous condition that caused the injury and granted the worker a judgment against the city and the city a judgment against the contractor (ENR Aug. 22, p.61).[1]

The decision was appealed, and the trial court was reversed. The appellate court[2] held that the evidence did not justify a finding of negligence on the part of the city. It said: "Under instructions of Belpark (contractor), they cut through a solid bulkhead wall. Black liquid flowed through the opening, as a result of which Steeley (plaintiff) was injured. The sewer line had been constructed under a contract between Belpark and the city. The city had directed Belpark not to cut the bulkhead until a later date. In disobedience of that order Belpark directed Steeley to make the cut, as a result of which he was injured. An engineer employed by the city was present on the job but did not stop Steeley from performing the act. There is no evidence to show that the engineer had any power or authority to interfere with Steeley. After trial without a jury the trial court found for Steeley, holding that the city was negligent in failing to provide him with a safe place to work. In respect of the third-party complaint the trial court held that Belpark's negligence was active. Judgment was entered in favor of Steeley against the city and in favor of the city against the third-party defendant. The city and Belpark appealed from the adverse portions of the judgment. Judgment reversed on the law, with one bill of costs to appellants, and judgment granted to appellants on the merits. The findings of fact below are affirmed. We hold there was no evidence of any breach of duty or actionable negligence on the part of the city."

There was a dissent in the conclusion reached by the Appellate Division, so that there will probably be an appeal to the Court of Appeals unless the matter is settled.

(1) Steeley v. City of New York, 157 N.Y.S. 2d 734.

(2) Steeley v. City of New York, N.Y.L.J., July 16, 1957, p. 5-6.

Building Costs Defeat Architect's Recovery

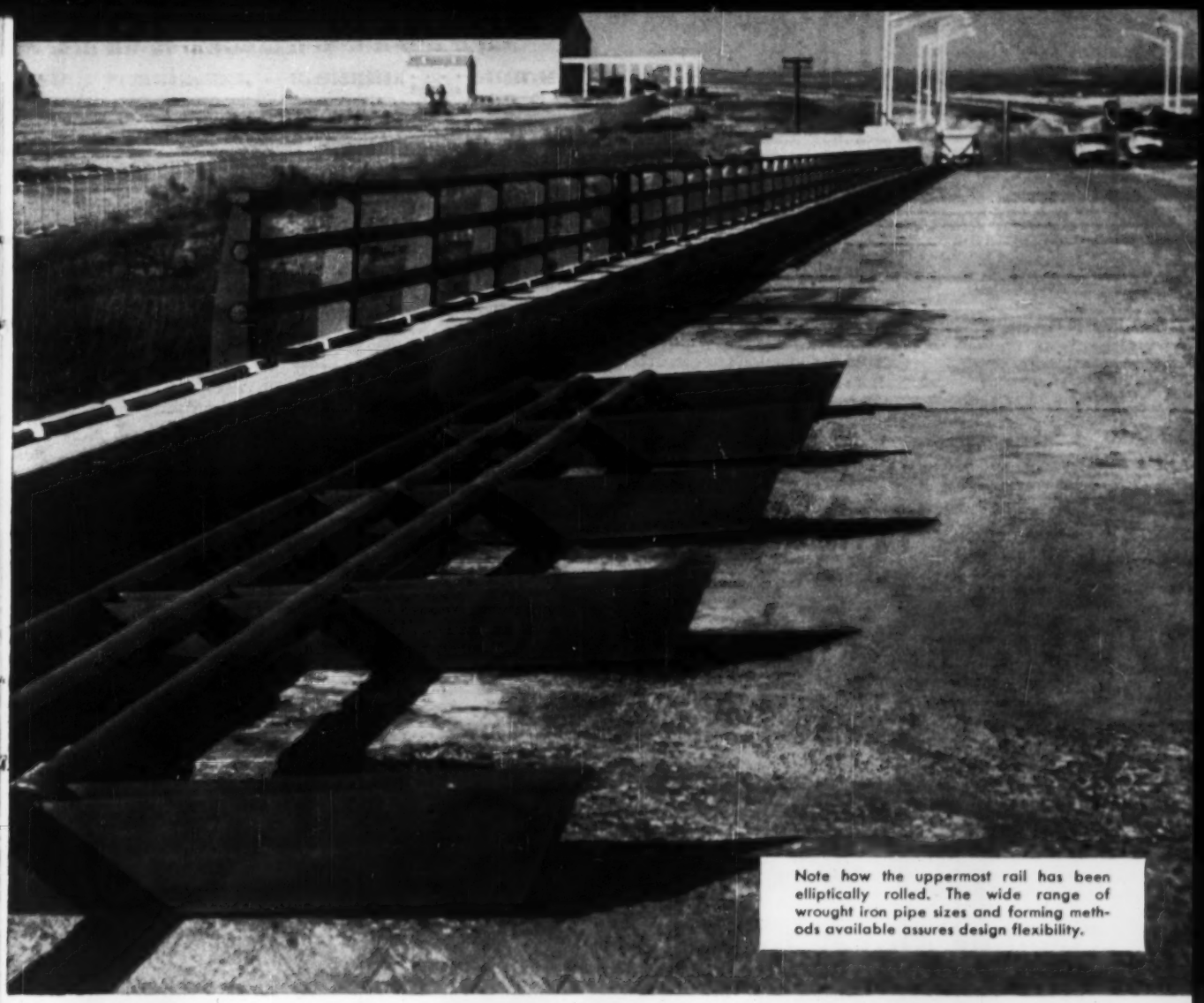
If an architect is retained to prepare plans for a building with the understanding that construction costs are not to exceed a specified sum, the architect is not entitled to compensation if the building cannot be erected for that sum.

In reaffirming this legal principle last spring, an Illinois court ruled that verbal approval of plans by the owner was not a waiver of the price condition when it occurred before the cost had been estimated and when the contract with the architect required acceptance of the specifications in writing.[1]

The owner, in that case, had merely told the architect that the plans appeared to be satisfactory, and, at the same time, asked him to estimate the building costs. The plans had not been approved in writing by the owner. Because the building could not be erected under the $30,000 stipulated sum, the architect was denied recovery for his services.

(1) Greenberg v. Birnberg, 141 N.E. 2d 744, Appellate Court of Illinois, April 17, 1957.

These summaries of court decisions are prepared by I. Vernon Werbin, New York attorney and civil engineer.



Note how the uppermost rail has been elliptically rolled. The wide range of wrought iron pipe sizes and forming methods available assures design flexibility.

Durable Wrought Iron bridge railings work easily in the shop—go up fast on the job

Wrought iron bridge railings meet the requirements of the entire roadbuilding team. Here's why.

For engineers and state highway people responsible for safety—as well as reduced costs—railings of wrought iron offer both. Wrought iron's structural strength gives it high impact resistance. And since wrought iron is not affected by attack from concrete, no special coatings are needed. Important too, is wrought iron's resistance to corrosive atmospheric conditions—another essential for long service life.

Fabricators benefit because of wrought iron's excellent working and welding qualities. Wrought iron bends and stretches with less fatigue or stress, and welds are sound and reliable. As a result, wrought iron pipe can be fabricated into easily erected units.

Once installed, wrought iron railings offer clear views through clean lines and simplicity of design. Our booklet, "Wrought Iron in Bridge Construction," contains illustrated case-history reports. Write for your copy.

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Teacher Moves to Top Road Job

While a 1957 legislature was reorganizing the North Carolina State Highway Commission (ENR June 27, p. 135), it was paving the way for a young civil engineering educator to vacate his classroom and assume one of the South's major transportation jobs.

Willard Farrington Babcock, professor of transportation engineering at North Carolina State College, was giving final exams and completing his 17th year as an educator early in June. Less than a month later, he had become North Carolina's first Director of Highways, chief executive officer of the 9,000-man highway department.

As a result of the new legislation, the state now has a seven-man highway commission, appointed by the governor. This group is a policy making body for the roads department, and the Director of Highways works with the commission in approximately the same relationship as a city manager with a city council.

Director Babcock, a 40-year-old native of Boston, did not need an introduction to the roadbuilding and planning phases of his job, and came to his new post with some knowledge of administration as a result of a private consulting engineering practice which he started in 1948.

Not a big man physically (he is 5 ft 4 in. tall, weighs 145 lb), he is well known to his students and to many highway officials throughout the Southeast as a man of enormous energy, as a teacher devoted to improving transportation and to training young engineers to play key roles in solving traffic problems. His students also know that he was addicted to as much actual field work as practicable, being especially fond of assigning term-length projects that required engineering aspirants to assemble data and complete every phase of their problems.

• **Father's footsteps**—The new director chose his career early. He decided to follow in the footsteps of his father, Prof. John B. Babcock, III, who recently retired from his position as head of the transportation engineering department at Massachusetts Institute of Technology.

By the time the younger Babcock was 22 years old, he had completed requirements for BS and MS degrees in civil engineering at MIT. When he left his alma mater in 1940, he came to North Carolina as an instructor, and rose to the status of full professor in 1952.

In his private practice, Mr. Babcock has served as consultant to at least 34 municipalities in North Carolina, including two of the state's largest cities —Greensboro and Durham.

• **Big job**—The new job as director of highways is big in all respects. For instance, each of the 9,000 employees of the highway department is responsible directly or indirectly to him. For another thing, more than 70,000 miles of road—one of the largest systems in the United States—are under his direction, and a record-breaking sum of $390 million will be spent on them during the next two years. Of the extensive road system, more than 36,000 miles are paved.

A reason for the great total of state roads is a North Carolina law passed in 1931 when the state took over county and local roads from the various county road commissions, and made itself exclusively responsible for maintenance and improvement of these highways.

This action, without precedent in the United States, immediately added more than 45,000 miles of road to the state's system.

• **Planning for future**—In accord with other traffic experts in the belief that congestion will increase, Mr. Babcock looks to see more limited access roads built as the years go on. In the few weeks since he assumed his new post, he has made it clear that long-range planning will be one of his chief concerns.

It is interesting to note that, in addition to statements offering jobs to any graduates of the North Carolina State College Engineering School, he already has appointed two of his former students to important posts in the highway department.

Robert Kimley, a graduate in 1951, has been named to a planning job and William Ingram, also a graduate of the school, is assistant to Secondary Roads Officer Harold Makepeace.

Scott Turner Is Named For 1957 Hoover Medal

Scott Turner, of New York City, former director of the U. S. Bureau of Mines, has been chosen by representatives of four major engineering organizations to receive their jointly sponsored Hoover Medal for 1957.

The gold medal—awarded "by engineers, to a fellow-engineer, for distinguished public service"—will be presented at the February annual meeting of the American Institute of Mining, Metallurgical, and Petroleum Engineers, one of the sponsors. The other sponsors are: American Society of Civil Engineers, The American Society of Mechanical Engineers, and American Institute of Electrical Engineers.

Ohio Water Committee Is Ready to Operate

A high powered group has been appointed to form the Ohio Water Survey Committee, a state organization charged with finding ways to increase Ohio's water resources.

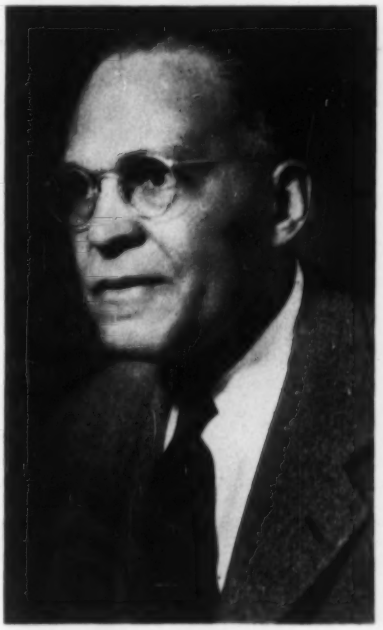
The committee will study the advisability of diverting Lake Erie water for industrial and sewage disposal use. Extension of flood protection, improved recreation facilities and the role of local governments in both matters are other challenges.

The committee members, as announced by Gov. C. William O'Neill are: Charles R. Hook, Armco Steel Corp. executive; Sterling E. Graham, Cleveland publisher; Harry M. Miller, Columbus utility executive; Herbert B. Eagon, Ohio director of natural resources; G. Taylor Evans, president of the Ohio Water Service Co.; John W. Sims, Ohio Farm Bureau vice president; Bryce C. Browning, secretary-treasurer of the Muskingum Watershed; Frank P. Brown, Akron plant engineer for B. F. Goodrich Co., and Oliver T. Burnham, executive of the Lake Carriers Association.

Corps Safety Engineer Gets Morocco Mission

Solutions to the complex safety problems arising from military construction in eight countries is the mission of Howard L. Schulte, safety engineer of the Mediterranean Division, Corps of Engineers. He recently arrived at the division's headquarters at Nouasseur, Morocco, and has taken on the job of insuring ways of meeting safety standards in construction in countries extending from Morocco to Pakistan.

Prior to his present assignment, Mr. Schulte—who has made studies and lectured on behalf of such organizations as the National Safety Council—was with the safety branch of the Corp's Kansas City District.



Arthur Ford Is New Head Of New York Water Board

Arthur C. Ford, former commissioner of water supply, gas and electricity, has been appointed a member and elected president of the New York City Board of Water Supply. He fills the vacancy left by the death of Irving V. A. Huie (ENR Sept. 5, p. 25).

Mr. Ford was named to the board by Mayor Robert Wagner and, after being sworn in, was elected president by the other members of the board, Edward C. Maguire and Herbert M. Rosenberg.

Membership on the board is a lifetime post, with the president paid $20,000 a year and the other two members, $15,000 each. Mr. Ford, who is 65, has been WSG&E commissioner, also at $20,000 a year, since January, 1954. The mayor's choice keeps the BWS presidency in an engineer's hands; Mr. Ford is an engineer, as was Mr. Huie.

Born in Washington, Mr. Ford, a mechanical engineering graduate of Montana State, joined the old New York City Board of Transportation in 1924. Following engineering assignments in both the sanitation and public works departments, he became consulting engineer in the Manhattan Borough President's office in 1949.

In New York City, it is BWS that picks and develops water sources, and then turns over the completed facilities to WSG&E for operation. After the third stage Delaware River water project is completed,—which will assure the city's water supply until the year 2000—the board's next extensive work will be big distribution tunnels within New York City.

Succeeding Mr. Ford as commissioner of WSG&E is Armand D'Angelo, deputy commissioner since January, 1955.

AICE Award of Merit Goes to Donald Quarles

Donald A. Quarles, deputy secretary of defense, has been selected as the 1957 recipient of the American Institute of Consulting Engineers Award of Merit.

The award, citing Mr. Quarles as an "able administrator and noted scientist," will be presented at the institute's annual dinner Oct. 15. The institute also praised Mr. Quarles for his "outstanding example of how scientific training, broad technical experience and conscientious endeavor can be combined successfully to meet the demands of enlightened government in a free economy."

Diercks Is Commander Of Army Map Service

Col. Frederick O. Diercks is new commanding officer of the Army Engineers Map Service, Washington, D. C. He replaces Col. Julian D. Abell, who has been assigned to Heidelberg, Germany, as Deputy Engineer, U. S. Army, Europe.

A U. S. Military Academy graduate, Colonel Diercks has a master's degree in civil engineering from Massachusetts Institute of Technology and a master's in photogrammetry from Syracuse University. Most of his Army career has been in topographic mapping and engineer intelligence assignments.

Jenkins Becomes Chairman Of University Department

Herbert T. Jenkins, former professor of civil engineering at Cornell University, has assumed the position of chairman of the department of engineering drawing in the University of Michigan's college of engineering.

A graduate of the University of

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. . . Men and Jobs

Michigan, Professor Jenkins had been at Cornell for 22 years. His pre-faculty work included employment by Ayres, Lewis, Norris & May, Ann Arbor consulting engineers. After World War II, he and two other Cornell professors formed the consulting engineering firm of Bogema, Gifft & Jenkins.

Careers

Public Works

William F. Gallancy has been appointed assistant state engineer for the six-county Rochester, N. Y., district. He has been serving in state service since 1927.

Earl L. Reeb, former state highway director in Ohio, has been appointed special expediter of the Ohio Highway Department. He was chief maintenance engineer in the department prior to becoming director in 1948.

Matthew Ward, systems planning engineer of the Ontario Hydro-Electric Power Commission, Toronto, has been appointed acting director of planning, succeeding **M. H. Mackenzie,** who has left the commission.

Lawrence F. Miller, chief aquatic biologist, has been appointed chief of the fish and game branch of the Tennessee Valley Authority, succeeding **A. H. Weibe,** who is retiring.

Robert C. Smith has joined the staff of Battelle Memorial Institute, Columbus, Ohio, where he will be in charge of the water resources research conducted within the institute's department of economics.

Education

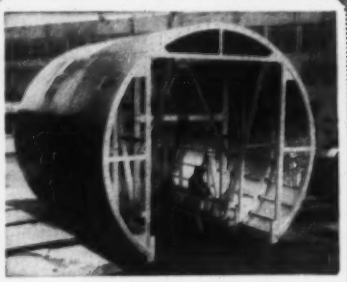
Richard S. Engelbrecht, associate professor of sanitary engineering, has been placed in charge of the sanitary engineering research and teaching program at the University of Illinois. He succeeds **J. C. Dietz,** who has resigned to become a partner in the consulting firm of Clark, Daily & Dietz, Urbana, Ill.

Ashley S. Campbell has been made dean of engineering, Tufts University, succeeding **Harry P. Burden,** who has retired.

Charles E. Schaffner, professor of civil engineering and director of the evening school at the Polytechnic Institute of Brooklyn, has been named associate dean of the Institute.

Bruce M. Davidson, assistant professor of civil engineering, has been appointed assistant dean of the college of engineering of the University of Wisconsin.

John W. Briscoe has been appointed assistant department head of the University of Illinois Civil Engineering Department.



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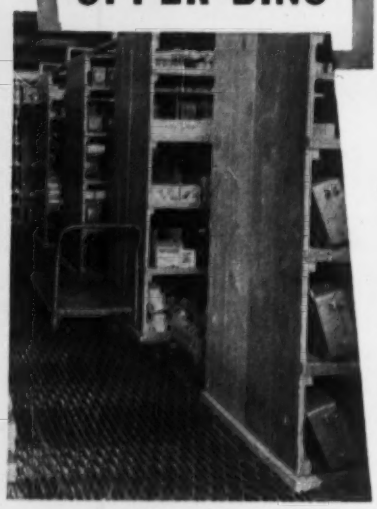

To solve the storage problem in this plant, storage bins along two walls were extended to the ceiling. But to reach the upper level of bins, it was necessary to use a long hazardous ladder.

Safe and easy access was achieved by installing a mezzanine made of open metal grating, midway between the ceiling and the floor. The mezzanine is reached via a stairway also made of grating.

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Freeway for California Includes Pumping Plant

This is 8.8 miles of 4-lane divided highway with frontage roads, ramps and connections in San Jose, Calif. built by the California Division of Highways. The $5,419,268 contract to Gordon H. Ball, Gordon H. Ball, Inc., Ball & Simpson and Lew Jones Construction Co. of Berkeley includes also 14 reinforced concrete bridges, one steel and concrete bridge and three pumping plants.

Pavement is portland cement concrete on a cement treated subgrade which has plant-mixed surfacing.

Contractor furnishes all materials except paint and sign panels.

Minimum wages set for this work include: carpenters $3.00, cement finisher $2.995, power shovel operator, 1 yard and less $3.425, over 1 yard $3.535, electricians $3.61, tractor operators $3.095, common labor $2.325.

The seven bidders included:

1C	Gordon H. Ball, Gordon H. Ball, Inc., Ball & Simpson & Lew Jones Const Co., Berkeley, Calif	$5,419,268
2	Fredericksen & Kasler, Sacramento, Calif	5,444,554
7	McCammon-Wunderlich Co., & Wunderlich Contr Co., Palo Alto, Calif	6,125,427

Bids: 6-5-57 Items	Unit	Quantity	Unit Prices 1C	2
Remov				
temp base & surf	sy	560	$0.20	$0.20
raised traf bars	lf	100	0.30	1.00
traffic stripes	lf	5,000	0.15	0.12
concrete	cy	875	4.00	4.50
conc pave	sy	1,175	0.70	1.00
Clear & grub			244,000	375,000
Water, dev sup & f equip apply	Mgal	43,000	1.50	0.60
Compact orig ground	sy	385,000	0.05	0.04
Excavation, roadway	cy	1,212,000	0.40	0.40
structure	cy	29,660	4.50	2.00
Backfill, structure	cy	19,545	3.25	3.60
Excavation				
structure, tp A	cy	525	8.00	15.00
ditch & channel	cy	2,930	1.00	1.40
Overhaul	stay	56,000,000	0.003	0.003
Imported borrow	t	65,500	0.50	0.70
Process select matl	t	316,100	0.75	0.80
Erosion control			700.00	500.00
Untreated base	t	10,500	3.00	3.00
Mix, sprd & comp cem subgr	sy	225,000	0.25	0.25
base	sy	252,000	0.30	0.25
Portland cement	bbl	19,500	4.30	4.00
Asph emul cur sl pt bdr & sl ct	t	202	55.00	50.00
Liq asph,				
MC-2, curing seal	t	227	55.00	45.00
SC-1 pen tr & prime ct	t	202	50.00	40.00
Pav asph PMS	t	2,210	6.25	5.00
Mineral aggr PMS	t	44,100	6.25	5.00
Plac PMS				
ditch lin & apr pav	sy	1,375	0.50	1.00
dikes	lf	30,000	0.20	0.20
Screenings seal coat	t	202	6.00	7.00
Conc pave, cl B	cy	50,000	15.00	15.00
Pave tie assemblies	ea	34,500	0.55	0.50
Conc, cl A, struct	cy	397	55.00	55.00
footing blocks	cy	165	40.00	30.00
bridge, 12,675 cy	ls	job	779,319	770,000
cl B, pipe encase	cy	119	22.00	25.00
Rubber waterstops	lf	223	2.00	2.00
Inlets, type A3	ea	112	220.00	200.00
B3	ea	12	240.00	200.00
C3	ea	11	265.00	200.00
D	ea	27	265.00	200.00
H3	ea	40	240.00	200.00
J	ea	20	190.00	200.00
M	ea	3	160.00	100.00
barrels	lf	290	40.00	35.00
Steel, bar reinf	lb	63,500	0.14	0.12
bridges 2,464,000,lbs	ls	job	342,495	300,000
Waterproofing, 3-ply mem	sy	275	4.00	4.00
Covering, protective	sy	270	2.00	2.00
Concrete piling f	lf	17,485	3.25	3.50
d	ea	612	92.00	100.00
Steel, struct, 796,000 lbs	ls	job	176,256	160,000
Misc iron & steel	lb	74,980	0.30	0.30
Pumping plant metal work	ls	job	3,300	4,000
Clean & paint struct steel	ls	job	11,000	10,000
Douglas fir timber	Mfbm	1.5	400.00	1,000
Conc, cl B,				
curbs & gutters	cy	5,375	34.75	35.00
sidewalks	cy	1,025	34.00	30.00
Curb dowels	ea	450	1.00	1.00
Monuments, right of way	ea	26	9.00	8.00
survey	ea	57	11.50	20.00
Sacked concrete riprap	cy	4,400	34.00	30.00
Guard railing,				
met plate	lf	19,500	3.50	4.00
rem & reconstr	lf	460	1.30	1.70
Steel railing	lf	6,246	8.00	8.00
salv & reset	lf	374	2.25	5.50
Markers, horiz refl units & gd posts	ea	1,230	5.95	7.00
remov & reset	ea	25	2.25	2.50
Fence, new property	lf	12,400	0.40	0.50
72" chain link	lf	73,500	1.50	1.60
Gates, 6' chain link	ea	18	70.00	60.00
Fence, property reconstr chain link rem & reconstr	lf	445	0.25	0.25
	lf	1,720	0.95	1.00
RCP, 12"	lf	3,444	2.20	2.40
15"	lf	64	2.60	3.50
18"	lf	8,492	3.30	4.00
24"	lf	4,136	5.00	5.80
27"	lf	1,148	6.50	6.50
30"	lf	3,692	6.70	8.20
48"	lf	248	14.00	15.00
54"	lf	604	18.00	18.00
CMP, 12" 16 ga	lf	856	3.25	3.60
18" 16 ga	lf	256	4.00	4.80
24" 14 ga	lf	98	6.00	6.20
48" 12 ga	lf	6	20.00	15.00
Casing pipe, 27"	lf	20	45.00	30.00
PMP underdrains, 8"	lf	9,400	2.00	2.10
Filter material	t	10,200	3.00	3.00
CMP downdrains, 12"	lf	34	3.50	3.70
Entr tapers, 12" met pipe	ea	7	60.00	70.00
CMP downdrains, salv & relay	lf	100	2.00	1.50
Asb cem pipe, 4"	lf	5,750	1.30	1.70
6"	lf	94	2.00	3.00
Clay sewer pipe, 8"	lf	472	5.50	4.00
12"	lf	820	4.00	6.00
15"	lf	856	11.00	8.00
18"	lf	908	14.00	12.00
Cast iron pipe, 6"	lf	468	6.50	6.00
Manhole, type A	lf	95	33.00	30.00
B	lf	66	40.00	30.00
special brick	ea	1	350.00	300.00
Flushing inlet	ea	1	27.00	50.00
Sand backfill matl	t	31	3.80	4.00
MH frames & covers	ea	6	80.00	60.00
salv & reinst	ea	15	33.00	40.00
Adj manholes to grade	ea	12	33.00	50.00
Welded steel pipe,				
4" 14 ga	lf	50	1.90	2.00
8" 14 ga	lf	54	3.00	2.50
10" 7 ga	lf	482	11.00	5.00
12" 12 ga	lf	190	5.00	5.00
16" 7 ga	lf	368	11.50	7.00
Galvanized steel pipe, 1"	lf	1,010	1.10	1.50
Gate, auto drainage, 30"	ea	1	200.00	200.00
slide, 30"	ea	1	160.00	400.00
48"	ea	1	450.00	450.00
Gate valve, 6"	ea	1	150.00	100.00
Special standpipes	ea	2	400.00	250.00
Finish roadway	ls	job	15,000	10,000
Raised traffic bars	lf	40	2.50	2.50
Drainage pump equip	ls	job	10,000	6,000
Pump house elect equip	ls	job	3,300	3,000
Undergr conduit & conduct, service	lf	1,150	2.00	2.00
Struct for illum signs	ls	job	55,000	50,000
Electrical systems	ls	job	97,000	160,000

Completion Time: 360 working days, start 7-1-57
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See RB&W catalog in Sweet's Industrial Construction File . . . or write for this "How to" bulletin. Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, New York.

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Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES

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- Iron and Steel Products, pipe: Last, Oct. 12; Next, Nov. 14
- Wood Products, Glass, Explosives, Chemicals: Last, Oct. 24; Next, Nov. 21
- Clay Products, Lime, Plaster, Paint, Roofing: Last, Sept. 26; Next, Nov. 28

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Atlanta	$149.90p	$149.90p	$299.80p	$334.55p	.....	.....	$30.50p	$32.70p	$23.50	$24.50	$.....
Baltimore	203.00	217.00	406.00	485.50	596.00	681.00	36.00k	41.00k	33.00	22.00	.....
Birmingham	135.00p	152.00p	.....	303.00p	376.00p	465.00p	27.00ff	38.00y	35.02	22.30	26.33g
Boston	220.75†	235.56†	441.75†	529.50†	.....	.....	41.50p	46.50p	39.20†	31.20†	.....
Chicago	135.00	145.00	280.00	.....	.....	.....	30.00	32.00	38.00	35.20e	.....
Cincinnati	205.00j	225.00j	296.00jdd	213.00j	288.00j	314.00j	45.75j	47.00j	30.04j	26.04i	30.04j
Cleveland	209.00	223.00	.....	475.00	.....	.....	43.00	47.00	31.00	25.00	.....
Dallas	152.00	152.00	300.00	364.50	446.25	552.50	27.00	48.25	41.60	25.08	27.65
Denver	.....	.....	.....	.....	.....	.....	31.00	47.50	46.00p	42.00p	46.00p
Detroit	273.00	298.00	545.00	.....	662.00	755.00	47.50p	48.00p	38.00	30.00	.....
Kansas City	158.00	158.00	312.00	312.00	400.00	500.00	33.00	33.00	36.26	34.26	29.76
Los Angeles	r	r	r	r	r	r	32.50¶	.....	38.00	38.00	39.00
Minneapolis	188.00p	210.00p	429.00p	210.00pw	.....	.....	43.00vp	52.50y	47.00bbe	37.00bbe	49.00bbda
Montreal	170.00au	178.00au	325.00au	270.00q	400.00q	.....	42.00b	49.00b	39.00	22.00	13.25
New Orleans	186.00	186.00	380.00	380.00	.....	.....	40.00	55.00	44.00	32.00	32.00P
New York	158.10h	168.60h	231.70eh	255.20hn	.....	.....	44.00	.....	38.00	35.00	.....
Philadelphia	169.00	180.20	337.90	405.00	.....	.....	30/34	38/42	27.60	25.60	3.17m
Pittsburgh	147.50t	157.75t	295.00t	335.00t	435.00t	500.00t	39.00t	46.00t	32.00t	28.00t	.....
St. Louis	178.50s	185.00p	391.00p	401.00p	459.00	621.50	43.00l	41.50	0.95aa	.80aa	1.35z
San Francisco	156.85*	177.10*	235.30dd*	.....	.....	.....	43.00*	43.00*	27.75	27.75	30.50i
Seattle	225.00p	250.00p	450.00p	250.00pz	.....	.....	43.00	57.00	52.00bb	38.00bb	4.50mbb
Toronto	146.00	157.00	286.00	234.00f	395.00	.....	30.00	63.00	36.00	33.50	31.50

*‡ F.o.b. Yard. *** F.o.b. plant Stockton. *† F.o.b. yard Roxbury. *s Smooth. *¶ Provincial and Municipal tax extra. *r Not used: earthquake danger- *h $4.50 del. *c 8 x 12 x 12 in.-3 cell. *d Pulverized hot. *e 8% 10th following month. *f 8 x 8 x 12. *g Lumps, $28.72. *i F.o.b. trucks, job site N.Y.C. *j 60 lb sacks. *l Truck load or over. *k $1.00 discount. *l Red face. *m Per bbl., 180 lb. processed. *n 7¾ x 7¾ x 12. *o Mason's double hydrated pressure. *p Truck lots. s,8 x 16 x 12. *t 2% cash. *u Incl. Federal tax. *v Sand lime. *w 5 x 8 x 12. *y Chi common. *z Pebble: 80 lb sack. *aa 50 lb sack. *bb LCL. *dd 6 x 12 x 12. *ff 80% common. *gg Rough. $40.00 smooth.

PAINT, ROOFING—F.O.B. CARLOAD LOTS

	RED LEAD Per 100 lb. in 500-lb. (Approx.) bbl. Dry a	WHITE LEAD Per 100 lb. in 100 lb. cases In oil w	READY-MIXED PAINT Per gal., drums Graphite b	Aluminum c	Ferric Oxide d	ROOFING SUPPLIES; Carload lots f.o.b. factory Rolls, slate surfaced, 85-90 lb. per sq.	Asphalt felt, per 100 lb.	Tar felt, per 100 lb.	Asphalt coating per gal.	Tar pitch 380 lb. bbl. per ton
Atlanta	$16.50	$30.125	$3.59	$3.86	$3.31	$3.39	$2.20	$2.62	$0.67	$57.75
Baltimore	16.25	29.75	3.00	4.40	3.50	2.78	4.25	4.25	.48	50.18
Birmingham	16.50	30.125	3.90	3.40	.....	3.09	2.29ii	2.29ii	.82ff	45.00ee
Boston	16.25	29.75	.....	.....	.....	3.63g q	2.83eq	2.83eq	.50q	58.00q
Chicago	16.25	29.75	.....	.....	.....	3.60¼u	2.98¼o	2.98¼o	45.00¼bbs	55.70¼
Cincinnati	16.25	29.75	.....	.....	.....	3.13	2.70	2.73	.428y	55.96
Cleveland	16.25	29.75	2.48ppq	2.61qq	2.91qq	3.73q	2.85e	2.85e	.501y	47.00qq
Dallas	16.50	30.50	.....	3.20fl	.....	3.00u	3.00e	3.00e	.464	65.00kk
Denver	16.75	30.25	3.39	5.15	3.04	2.80	2.10e	2.40e	.43ff	50.00
Detroit	16.25	29.75	2.70	3.95	2.70	3.30	2.54f	2.400f	.582ff	47.30
Kansas City	16.25	30.50	3.94	3.38	2.96	3.60ii	2.76e	2.76e	.664y	.....
Los Angeles	16.25	30.00	3.30n	4.50n	4.20n	3.20n	2.15en	i	.70nv	i
Minneapolis	16.25	29.88/29.75	.....	.....	.....	2.99	2.41hi	2.41hi	.442i	50.00r
Montreal	.....	.....	5.02Dfl	5.94xfl	4.85kfl	5.40	4.65f	4.65f	1.60	.....
New Orleans	.....	.....	.....	.....	.....	2.74	2.18	2.43	0.689	.....
New York	15.75f	29.75	.....	.....	.....	3.19	2.45e	2.45e	.425a	49.00*
Philadelphia	16.25	29.75	3.60	3.40/3.65	3.50/4.60	3.00/3.30	2.54e	2.54e	.37/.45	48/54
Pittsburgh	16.25	29.75	2.104E	2.254F	2.254G	3.37s	2.55s	.....	.45	.....
St. Louis	16.25	29.75	.....	.....	.....	3.70iis	2.75hh	2.75hh	.46ty	64.00
San Francisco	16.25	30.00	3.20	4.30	3.50	2.69	2.09aa	3.10	.47jj	54.00
Seattle	16.25	30.25	3.47ee	4.19ee	.....	3.82qee	3.30hee	.....	.50ee	47.20ee
Toronto	.....	.....	.....	.....	.....	4.45	4.10e	4.65e	1.70j	88.00A

*† Delivered. * Note: Red lead in oil 50% higher than white lead in oil. ** Aver. wt. approx. 425 to 550 lb drums. *a Red lead prices change frequently due to pig lead price changes. *b U.S. War Dept. Spec. 3-49A. *c ASTM Spec. D266-31. *d 80% minimum ferric oxide. *e 15 lbs. *f Per 432 sq ft. *g F.o.b. yard, Roxbury. *h Per roll, 65 lb. *i Net carload prices, Minneapolis and vicinity. *j 45 gal containers. *k Over 80% ferric oxide. *l Not used. *n F.o.b. city. *o Per 60 lb roll. *p 5-drum, 50 gal each. *q Per 90-lb roll. *r F.o.b. factory, Chicago. *s Truckload. *t Incl. Federal tax. *u Per 90-lb square. *v Per ton. *w Price to contractors $1.25 less. * Ready-mixed. *y 55-gal container. *z Drums. *aa 15 lb. sq. ft. roll. *bb Roofers coating and cement. *cc LCL, truck delivery. *ee Asphalt pitch in 100 lb package. *ff 5-gal drums. *gg F.o.b. factory. *hh Incl. freight. *ii Per roll. *jj Asbestos roof coating. *k 400 lb barrels. *ll ASTM Spec. D962-49. *(95%. *D Std. black. *# Milt. spec.: E TTP27; F TTV81; G TTP31.

PLASTER, VERMICULITE AND METAL BUILDING SHEETS & TUBING

	PLASTER† Neat per ton	Gauging per ton	VERMICULITE† Home Insulation pellets	Plaster aggregate	Concrete Aggregate Untreated	PERLITE† Plaster Aggregate	Concrete Aggregate Untreated	ALUMINUM SHEET†† Flat .102" th 36"x96" & 48"x144" per lb/pt	Corr type .032" th 35"x12' per sht	STAINLESS STEEL† SHEET-TYPE 302g 20 ga 48"x96-120" per cwt/sh	28 ga 36"x120" per cwt/mm	COPPER WATER* TUBING-TYPE L 2000 ft lots per ft ½"b	⅝"e
			per bag of 4 cu ft										
Atlanta	$31.00	$36.00	$1.55s	$1.65s	$1.80sl	$1.65	$1.65	$0.422n	$8.97n	$61.44n	$67.50	$16.74f	$23.41f
Baltimore	23.25	33.65	0.95	1.15	1.15	1.15	1.65	0.431	0.489r	56.25	64.25	0.1674	0.2341
Birmingham	33.00	39.00	1.55	1.55	1.80l	1.55	1.55	0.466	10.48	67.34	76.09	0.1608	0.2249
Boston	22.00	30.00	1.40	1.40	1.45	1.45	1.50	0.446	30.10p	65.39dd	71.84ddff	0.1608	0.2249
Chicago	26.80	26.80	1.55	1.60	1.60l	1.50	1.50	0.506x	10.376a	65.15aee	73.90aee	0.1608	0.2249
Cincinnati	28.00*	28.00*	1.75	1.75	1.75	1.85	1.90	0.434	9.56	65.03	71.28ff	0.1591	0.1911
Cleveland	26.50	43.00	1.13k	1.16¾j	1.24l	1.45	1.45	0.506aa	8.66	67.83	76.58	16.08f	22.49f
Dallas	30.00	32.00	1.05	1.21	1.37l	1.21	1.37	0.474	0.5100r	66.59	80.00	0.200	0.2810
Denver	25.00	25.00	1.50	1.40	1.50	1.40	1.55	0.462	10.18	66.30gg	74.80gg	0.2006	0.2810
Detroit	25.00	25.00	1.28	1.32	1.41	1.45	1.45	0.456a	10.376a	65.15a	73.90a	13.30f	24.78f
Kansas City	30.00	35.00	1.29	1.45	1.48l	1.18	.....	0.444	11.40	67.50	76.25	16.08f	22.49f
Los Angeles	26.20	27.20	1.25k	1.15k	1.25	1.00	1.10	0.506	10.543d	67.10	75.85	0.1556	0.2249
Minneapolis	33.00	33.00	1.55	1.60	1.80	1.40	1.40	0.503	15.15w	68.21	74.71ff	0.1556	0.2171
Montreal	27.60h	35.60h	1.20	1.40	1.50	1.15n	1.15n	0.437	9.92	66.50	.....	0.228	0.287
New Orleans	32.00	45.00	1.25	1.25	1.25	1.25	1.25	0.464	8.303	62.04	70.54‡	0.1899	0.2656
New York	24.00	30.00	1.35	1.30	1.50	1.40	1.40	0.506a	10.14ad	66.58	77.33	15.56f	21.71f
Philadelphia	23/25	32.00	1.35	1.35	1.40l	1.05	1.05	0.44aw	9.46a	66/68a	75/77a	20.00f	26.00f
Pittsburgh	28.00nn	28.00nn	1.60nn	1.50nn	1.35	1.50	1.65	0.456	9.8	63.41	76.18	0.1403	0.1768
St. Louis	29.00	40.00	1.35	1.60jj	1.55	1.60	1.60	0.492	10.37	70.86	77.36jy	16.08fm	22.49fm
San Francisco	27.85	32.00	1.20	1.20	1.30	1.20	1.30	0.505	9.13	65.20	73.75	0.1608	0.2949
Seattle	41.00	44.00	1.45	1.25k	1.85l	F1.80k	.....	0.506	9.964	67.08	88.08	0.1608	0.2249
Toronto	28.50	45.50	1.20	1.30	1.45l	.....	1.55	0.4095	24.00ae	73.74	86.52	0.2768	0.3347p

*trucklots, delivered †fob warehouse *fob city *a delivered *b½" O.D. *c ¾" O.D. *d 0.100"th *e 34" x 80" sheet *f per 100 ft *g 5 tons & up; cold roll, annsal & pickled; 2B finish *h Incl. Federal tax *j 1100 & 3003 alloy, mill finish *k bag of 3 cu ft *l treated with air entraining agent *m 2-10M ft *n fob mill, fr allow *p 100 sq ft *r per lb. *s 30 lb bag *t 36" x 96": 10.81 lb/sh; 48" x 144": 21.7 lb/sh *u 19.31 lb/sh *v fob plant *w 48" x 144" *x 100th *y 27 gauge *aa 18M lb & up *dd add $0.75 cwt boxing *ee 4 tons & up *ff 26 ga *gg add $2 cwt boxing; $0.75/cwt on skids *hh Theoretical wt for 48" × 96": 80.4-lb, per sh. *ii 300-lb bag lots *jj 100-lb bag *mm Theoretical wt: 19.7-lb per sh. *nn 2% cash

Materials and Labor Prices

Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES

- Cement, Aggregate, Ready-mixed Concrete, Asphalt: Last, Oct. 10; Next, Nov. 7
- Iron and Steel Products, Pipe: Last, Oct. 17; Next, Nov. 14
- Wood Products, Glass, Explosives, Chemicals: Last, Oct. 24; Next, Nov. 21
- Clay Products, Lime, Plaster, Paint, Roofing: Last, Sept. 26; Next, Nov. 28

BUILDING BOARD & LATH AND INSULATION—DELIVERED TRUCKLOAD LOTS

	GYPSUM PLASTER BOARD tapered edge per Msq ft ½"	½"	GYPSUM BOARD LATH plain or perf per Msq ft ⅜" x 16" x 48"	GYPSUM SHEATHING tongue & groove per Msq ft ½" x 2' x 8'	FIBER BOARD SHEATHING asph impreg & coat per Msq ft ½" sq ed	½" T&G	FIBER BOARD INSULATION sq edge, paint per Msq ft ½"	MINERAL WOOL INSULATION loose, per 40-lb bag a	3" batts per M sf	GLASS FIBER INSULATION loose, per 40-lb bag a	3" batts per M sf	ALUMINUM FOIL 60¢ Kraft 1 side foil per roll of 250 s. f.	Expansible Blanket 2 layers foil per Msq. ft
Atlanta	$70.00	$80.00	$43.50	$70.00	$70.00	$127.00	$70.00	$1.00	$80.00	$2.00[b]	$75.00	.....	.....
Baltimore	81.25[f]	44.75[f]	32.55[f]	55.00[f]	65.00[f]	108.50[f]	69.00[f]	1.30	66.50	1.50	45.00	$4.00[g]	$33.50
Birmingham	73.00	60.00	47.77	75.00	82.00	136.50	81.00	1.40	70.00	1.60	75.00	3.30[j]	.....
Boston	60.00[m]	50.00[m]	36.00[m]	60.00[m]	65.00[m]	120.00[m]	79.00[kn]	1.45	75.00	.....	60.00	5.50	52.50
Chicago	67.00	52.00	43.00	62.00	85.00	123.00	85.00	1.95	80.00[k]	.....	63/65[l]	5.25[g]	.....
Cincinnati	48.00[w]	42.85[w]	32.05[w]	51.15[w]	70.00[w]	125.00[w]	72.50[w]	1.30	63.00	1.30	76.80	3.12[j]	50.00
Cleveland	60.50	55.00	40.00	65.00	74.00	130.00	80.00	1.35/1.50	80.00	.....	62.75*	20.00[s]	60.00
Dallas	58.00	55.00	42.50	65.00	73.50	122.50	70.00	1.94	66.70	1.40	66.10	4.30[g]	.....
Denver	62.00	54.50	41.00	62.00	75.90	126.00	74.90	.....	71.00[u]	1.28[s]	75.00[s]	11.00[r]	21.00
Detroit	57.50	49.50	36.00	61.00	59.50	90.00	59.00	.....	.....	1.95[b]	83.00	.....	.....
Kansas City	55.00	55.00	40.00	.....	72.00	115.00	75.00	1.40	75.00	2.00	75.00	4.10[d]	44.10[t]
Los Angeles	64.00	59.00	0.335[z]	66.50	71.87	121.25	80.00	.....	83.00	1.35[s]	84.00	4.40[g]	.....
Minneapolis	75.00	65.00	0.40[z]	80.00	78.00	140.00	78.00	2.00	80.00	1.80	80.00	5.50	.....
Montreal	56.00	47.40	36/39	53.00	63.25	.....	63.00	1.50	66.00	1.50	66.00	9.00[g]	58.00
New Orleans	57.00	48.00	45.00	60.00	75.00	125.00	72.50	1.75	65.00*	.....	.....	.....	.....
New York	53.00	45.50	35.00	54.00	71.00	117.00	72.50	1.55[b]	68.50	1.55[b]	68.50	4.05[t]	52.50[r]
Philadelphia	50.55	48.53	34.40	49.54	68.73	108/110	55/65	.....	60/70	.....	70/75	5.60/6.34	40.50
Pittsburgh	.....	47.50	35.00	.....	60.00	100.00	55.00	1.05[s]	55.00[s]	1.05[s]	55.00[s]	2.75[t]	38.50
St. Louis	65.00	55.00	39.00	70.00	75.00	120.00	80.00	1.35	85.00	1.65	66.00	4.50[t]	.....
San Francisco	55.00	46.50	0.35[z]	58.00	68.00	109.00	67.00	1.60	66.50	1.60	66.50	4.95	58.00
Seattle	66.00	56.90	49.45	65.00	74.50	125.00	73.50	1.60[r]	74.00	1.60*[p]	80.00*[l]	4.25	46.50
Toronto	61.00	50.00	38.00	64.50	75.00	.....	.....	1.40	60.00	60.00	60.00	16.00[s]	48.45

** F.o.b. warehouse. [a] Semi thick. [b] 30# bag. [c] 12" to 24" width. [d] 40¢ kraft paper, 5 Msf, 100/500 rolls. [e] 20¢ sq ft bag, 4" thick. [f] Full trailer loads. [g] 80¢ kraft paper backing. [h] LCL. [i] 40¢. [j] 80¢. [k] 7". [l] 2". [m] 10 ton quantities. [n] Distributor's siding. [o] Per Msf roll. [p] 32¢ bag. [q] 500 sf. [r] Per cwt. [s] 35¢ bag. [t] 26¢ bag. [u] Flame proof $75. [w] F.o.b. city. [x] Sq yd.

HOURLY WAGE RATES—Base rate + fringe benefits

	Bricklayers	Carpenters	Struct. Iron Workers	Hoisting Engineers	Plasterers	Electrical Workers	Steamfitters	Common Labor Building	Common Labor Heavy Const
Atlanta	$3.45	$2.90	$3.15+7½[d]	$3.225	$3.125	$3.30+7¢[e]	$3.30+25¢[d]	$1.55	$1.55
Baltimore	3.80+10¢[d]	3.05+7½[d]	3.65+7½[d]	3.55/3.70+10¢[Q]	3.35+7½[d]	3.425	3.30+7½[d]	1.90+7½[d]	1.90+7½[d]
Birmingham	3.50	2.70	3.20+10¢[i]	2.65[i]	3.05	3.30	3.32+10¢[i]	1.50	1.60
Boston	3.65+15¢[d]	3.25+10¢[d]	3.70+20¢[e]	3.65+10¢[f]	3.30+13¢[R]	3.25+25¢[R]	2.45+7¢[d]	2.45+7¢[d]	2.35+7¢[d]
Chicago	3.82½+7½[e]	3.45+20¢[e]	3.80+15¢[e]	3.40+5¢[e]	3.70+23¢[e]	3.65+22¢[e]	3.55+22¢[e]	2.77½+7½[e]	2.77½+7½[e]
Cincinnati	3.75	3.45	3.50+7½[d]	3.225/3.475	3.50	3.67+4¢[N]	3.65+91¢[e]	2.50	2.40
Cleveland	3.715+10¢[i]	3.74	3.64+10¢[i]	3.74	3.74	3.765	3.64+10¢[d]	3.00	2.915
Dallas	3.775	3.10	3.125+7½[e]	3.20	3.50+10¢[e]	3.25+7½[e]	3.25+7½[e]	1.62½	1.62½
Denver	3.75	3.20	3.125+7½[e]	2.95	3.375+12½[AA]	3.40[f]	3.35+15¢[D]	2.10	2.10
Detroit	3.53+38¢[H]	3.25+40¢[e]	3.60+22½[P]	3.20+20¢[i]	3.58+34¢[e]	3.65+34½[C]	3.63+14¢[R]	2.58+15¢[e]	2.58+15¢[e]
Kansas City	3.75	3.125	3.20	3.22	3.50	3.475[G]	3.40+9¢[W]	2.255	2.305
Los Angeles	3.80+10¢[bb]	3.22½+10¢[d]	3.625+10¢[e]	3.19+10¢[d]	3.94+15¢[d]	3.90[f]	3.70+19¢[T]	2.50+7½[e]	2.50+7½[e]
Minneapolis	3.575	3.15	3.32	3.10	3.25+23¢[G]	3.25+36¢[R]	3.215+20¢[e]	2.40	2.40
New Orleans	3.325+5¢[e]	2.85	3.20+7½[e]	2.925+7½[e]	2.985+5¢[e]	3.275+7½[e]	3.15+15¢[e]	1.60	1.60
New York	4.25+37¢[bv]	3.90+31¢[bJ]	4.30+36¢[e]	4.15+33¢[cc]	4.15+50¢[A]	3.65+40¢[cF]	4.10+41¢[AL]	2.80+22¢[V]	2.80+22¢[V]
Philadelphia	3.75+17¢[i]	3.535	4.05+18¢[M]	3.29½/3.95½+10¢[i]	3.90+15¢[e]	4.07½+16¢[e]	4.00+11½[i]	2.25	2.55
Pittsburgh	3.95+17½¢[m]	3.525+7½[e]	3.80+10¢[d]	3.42+10¢[d]	3.575+17½[e]	4.00+28¢[d]	3.775+17½[e]	2.325+17½[e]	2.20+15¢[ff]
St. Louis	3.75+2½[bc]	3.35+10¢[i]	3.37+7½[e]	3.45[i]	3.675+7½[e]	3.75+26¢[e]	3.70+20¢[e]	2.40+10¢[e]	2.40+10¢[e]
San Francisco	3.95+52½¢[dd]	3.175+30¢[f]	3.62½+10¢[e]	3.205+10¢[e]	3.69+30¢[e]	3.525+26¢[G]	3.70+46¢[K]	2.505+10¢[e]	2.505+10¢[e]
Seattle	3.75+10¢[d]	2.94+10¢[d]	3.25+10¢[d]	3.13+20¢[e]	3.40+10¢[d]	3.40+21½¢[K]	3.40+23¢[T]	2.51+10¢[d]	2.51+10¢[d]
Montreal	2.20+16¢[t]	2.00+16¢[t]	2.15+16¢[t]	1.90+15¢[t]	2.22+19¢[t]	2.20+18¢[t]	2.22+18¢[t]	1.40+10¢[t]	1.40+10¢[t]
Toronto	2.76+11¢[t]	2.50+10¢[t]	2.50+10¢[t]	2.60+10¢[t]	2.60+20¢[t]	2.80+11¢[t]	2.49+16¢[t]	1.55+6¢[t]	1.55+6¢[t]

ENR Skilled Average (Bricklayers, Carpenters, Iron workers): $3.594. ENR Common Average $2.334.

* Cost of living bonus incl. in base pay. † FB. [a] 8 hr. day. [b] 7 hr. day. [c] 8% vac. stamp fund plus 10¢ VF for bricklayers; 4% VF for electricians plus 8¢ WF, 1% PF. [d] H & WF. [e] 10¢ H & W, 10¢ VF. [f] 10¢ H & W, 10¢ PF, 10¢ VF. [g] $2.85 homes & housing plus 7½¢ WF. [h] WF. [i] Inc. 4% VF; 1% PF pd by employer. [j] 10¢ WF, 8¢ VP, 5¢ HP. [k] 4% VF. [m] 7½¢ WF, 10¢ PF. [n] 7½ V & Hol. 3% H & W, 1% PF. [o] 10¢ WF, 10¢ PF. [p] 3% WF, 3% PF +10¢ in lieu of pd. hol. [q] 10¢ WF, 6% V & H, 3% PF. [r] 4% WF, 20¢ PF. [s] 8½ W & PF, 4% VF, 1% NC, 1% Jt. plus 6 PH. [t] Inc. 10¢ WF. [u] 10¢ WF, 1% PF, ½% apprent. [v] 1 drum; 2 drums, 2.80. [w] 15¢ WF, 15¢ VF. [x] 2% VF. [y] 10¢ H & W, 10¢ PF. [z] 10¢ WF, 8¢ HP. [A] 15¢ WF, 15¢ PF, 20¢ BF. [B] 7½¢ VP, 5¢ PF, 1½¢ Ed. F. [C] 9¢ H & W & Ins. 7% V & H. [D] 10¢ H & WF, 5¢ indus. prom. [E] 6% WF, plus travel pay per day. [F] Plus $4 per day annuity contrib. [G] 10¢ WF, 10¢ VF, 3¢ prom. [H] 10¢ WF, 10¢ VP, 3% PF, 2% PH. [I] 15¢ H & WF, 5¢ advtg. [J] 5% WF, 6 PH, 3% PF. [K] 25¢ W & PF, 15¢ VF, plus 6¢ misc. [L] 3% WF, 3% PF, 3% VF, 1% Ed. F. [M] 10¢ WF, 7½¢ PF. [N] 1% PF. [O] 10¢ WF, 1% NECA. [P] 10¢ H Ins., 7½¢ PF, 5¢ VF. [Q] 2 drums; 1 drum $2.85/3.00 + 10¢ WF. [R] 10¢ H & WF, 2¢ admin. 1¢ apprent. [S] 10¢ H & WF, 15¢ PF. [T] H & W, VF. [U] 10¢ WF, 13¢ VF, 3¢ PF. [V] 9% WF, 3% PF. [W] 7½¢ WF, 1½¢ Ed. F. [X] 7½¢ WF, 14¢ VF. [aa] 7¢ WF, 15¢ PF. [bb] 8¢ WF, 2¢ advg. [dd] 17½¢ WF, 20¢ PF, 10¢ PH, 5¢ Jt Bd. [ff] 10¢ H & W, 5¢ PF. [gg] 10¢ ins. [hh] 7½¢ H & WF, 5¢ indus. prom. [ii] 4% WF, 4% PF, 6 PH.

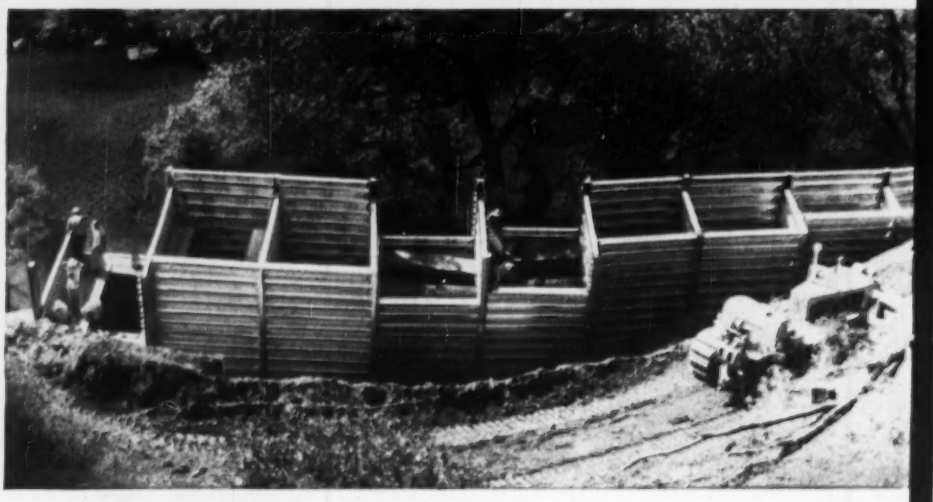
	Truck drivers 1½ T	Truck drivers —4 cy	Truck drivers +4 cy	Tractor Operators—Incl. bulldozers 34-49 hp	70-100 hp	100 & over	Tractor scraper 15-16 cy	Power cranes & shovels ½ cy	Power cranes & shovels ¾ cy	Motor grader oper	Air comp oper	Air tool oper
Atlanta	$1.70	$1.80	$2.05	$2.70	$2.70	$2.70	$2.70	$3.225	$3.225	$2.70	$2.475	$1.77
Baltimore	1.90+7½[e]	1.90+7½[e]	2.00+7½[bb]	3.15/3.30 +10¢[b]	3.15/3.30 +10¢[b]	3.15/3.30 +10¢[b]	3.15/3.30 +10¢[b]	3.55/3.70 +10¢[b]	3.55/3.70 +10¢[b]	3.15/3.30 +10¢[b]	2.85/3.30 +10¢[b]	2.00+7½[e]
Birmingham	1.73	1.92[ff]	2.18[gg]	2.79	2.79	2.79	2.93	2.93	2.93	2.89	2.52	1.75
Boston	2.395[f]	.....	.....	3.275+10¢[cd]	3.275+10¢[cd]	3.275+10¢[cd]	3.275+10¢[cd]	3.65+10¢[e]	3.65+10¢[e]	3.275+10¢[e]	3.20+10¢[e]	2.60+7¢[e]
Chicago	2.16+12¢[fe]	.....	.....	3.15+5¢[e]	3.30+5¢[e]	3.20+5¢[e]	3.00+5¢[e]	3.75+5¢[e]	3.75+5¢[e]	3.25+5¢[e]	3.10+5¢[e]	.....
Cincinnati	2.33[ee]	2.43[ee]	2.53[ee]	3.225	3.225	3.225	3.225	3.475	3.475	3.475	3.475	3.475
Cleveland	2.625+10¢[e]	2.625+10¢[e]	2.625+10¢[e]	3.49	3.49	3.49	3.49	3.74	3.74	3.49	3.395	3.365
Dallas	1.625	1.625	1.625/2.625[f]	1.625/2.625[f]	1.625/2.625[f]	1.625/2.625[f]	1.625/2.625[f]	1.625/2.625[f]	1.625/2.625[f]	1.625/2.625[f]	1.625/2.00[f]	1.775/2.00[f]
Denver	2.20	2.30	2.45	2.20	2.80	2.80	2.80	2.95	2.95	2.80	2.80	2.40
Detroit	2.61	2.61	2.61	3.50+10¢[e]	3.50+10¢[e]	3.50+10¢[e]	3.50+10¢[e]	3.50+10¢[e]	3.50+10¢[e]	3.50+10¢[e]	3.225+10¢[e]	2.71+25¢[mm]
Kansas City	2.23[n]	2.23[n]	2.305[n]	2.425	2.925[n]	2.975[n]	2.975[r]	3.22	3.22	2.835	2.975[r]	2.35
Los Angeles	2.63+7½[e]	2.63+7½[e]	2.63+7½[e]	3.47+10¢[e]	3.47+10¢[e]	3.47+10¢[e]	3.56+10¢[e]	3.56+10¢[e]	3.56+10¢[e]	3.56+10¢[e]	2.74+10¢[e]	2.71+7½[e]
Minneapolis	2.40	2.40[e]	2.55[e]	2.78	3.00[e]	.....	3.00	3.22[e]	3.45[e]	2.78	2.67	2.53
New Orleans	1.75	2.00	2.00	2.275+7½[e]	2.925+7½[e]	2.925+7½[e]	2.925+7½[e]	2.925+7½[e]	2.925+7½[e]	2.925+7½[e]	2.275+7½[e]	1.70
New York	2.21+22½[cc]	2.75+14¢[bb]	2.75+14¢[bb]	3.525+28¢[A]	3.525+26¢[A]	3.525+28¢[A]	3.65+29¢[A]	4.40+35¢[A]	4.40+35¢[A]	3.65+29¢[A]	3.65+29¢[A]	3.25+16¢[cc]
Philadelphia	——2.215/2.35+12½¢——			——3.20½/3.95½+10¢——			3.20½/3.95½ +10¢[e]	——3.20½/3.95½+10¢——		3.20½/3.95½ +10¢[e]	3.20+10¢[e]	2.25+10¢[e]
Pittsburgh	2.27+15¢[m]	2.40+15¢[m]	2.50+15¢[m]	3.23+10¢[e]	3.23+10¢[e]	3.23+10¢[e]	3.23+10¢[e]	3.42+10¢[e]	3.42+10¢[e]	3.42+10¢[e]	3.06+3.60[e]	2.25+15¢[m]
St. Louis	2.50+7½[ee]	2.60+7½[e]	2.60+7½[e]	3.45[kk]	3.45[kk]	3.45[kk]	3.45[kk]	3.45[kk]	3.45[kk]	3.45[kk]	2.90[kk]	2.90[kk]
San Francisco	2.55+10¢[e]	2.55+10¢[e]	2.69+10¢[e]	3.32+10¢[e]	3.32+10¢[e]	3.32+10¢[e]	3.32+10¢[e]	3.65+10¢[e]	3.65+10¢[e]	3.48+10¢[e]	2.93+10¢[e]	2.775+10¢[e]
Seattle	2.80+17½[ee]	2.80+17½[ddee]	3.00+17½[ee]	3.10+20¢[ee]	3.10+20¢[ee]	3.10+20¢[ee]	3.10+20¢[ee]	3.46+20¢[ee]	3.46+20¢[ee]	3.19+20¢[ee]	2.85+20¢[ee]	2.71+10¢[ee]
Montreal	1.40+11¢[ll]	1.40+11¢[ll]	1.40+11¢[ll]	1.60+15¢[ll]	1.83+15¢[ll]	1.83+15¢[ll]	1.83+15¢[ll]	2.09+16¢[ll]	2.09+16¢[ll]	1.83+15¢[ll]	1.70+15¢[ll]	1.70+15¢[ll]
Toronto	1.60+6¢[ll]	1.60+6¢[ll]	1.60+6¢[ll]	2.00+8¢[ll]	2.10+8¢[ll]	2.10+8¢[ll]	2.10+8¢[ll]	2.60+10¢[ll]	2.60+10¢[ll]		2.15+9¢[ll]	2.15+9¢[ll]

[a] H & WF. [b] lower rates, straight time; other broken. [c] 2-axle; 10 wh. 3 axle $2.45; Euclid $2.65. [d] intermediate. [e] bldg contr.; highway $2.45+7¢ WF. [f] less than 2-T. [g] up 6 cy. [h] 4% WF, 4% PF. [i] 6-8 cy. [j] plus $2 pd by employer for hosp. death benefits to family. [k] bldg constr; steel contr $3.475. [l] higher rates are union, other taken from min. wage approved by County Comm. Court. [m] 10¢ H & W, 5¢ PF. [n] flatbed. [o] under 10 cy. [p] over 10 cy. [q] over 50 hp. [r] blade grader. [s] WF. [t] single. [u] incl. 10¢ H & W. [v] incl. 7½¢ H & W. [w] 7½¢ H & W. 5¢ PF. [x] 7½¢ WF, 10¢ PF. [y] to 3½ cy. [z] 3½ cy & over. [aa] plus W & PF. [bb] 3% WF, 2% PF; plus 11 PH. [cc] 11¢ WF, 11½¢ PF, 11 PH. [dd] up to 5 cy. [ee] 5 cy & over. [ff] 1½ to 3 T. [gg] up to 5 T; 5 T & over, 2.25. [hh] 8¢ H & WF, 2½¢ PF. [ii] 4% VF. [kk] Incl. 10¢ WF. [ll] FB. [mm] 10¢ H & WF, 10¢ ins. 5¢ VP. [oo] Plus $2.25 wk. WF. [ss] 5% WF, plus 6 PH. [tt] 10¢ H & WF, 10¢ PF.

MEXICO CITY PRICES

In Pesos, F.o.b. City		Sept. '57	Oct. '57
Common Wages—Building (8 hr. day) (Peons)	av. per hr.	1.38	1.50
Common Wages—Heavy Const. (8 hr. day) (Peons)	av. per hr.	1.38	1.86
Skilled Labor Wages			
Carpenters (8 hr. day) 1 cl.	av. per hr.	2.48	3.10
Bricklayers (8 hr. day) 1 cl.	av. per hr.	2.48	2.50
Struct. Iron Workers (8 hr. day)	Remachadores. av. per hr.	3.77	3.77
Struct. Steel, Shapet		Sept. '57	Oct. '57
3"-15" x 12 meters	per metric ton	2100.00#	2300.00#
# fob Monterrey			
Reinf. Steel, Corr. Rods			
⅜" x 11 meters	per ton	2000.00	2000.00
½" x 11 meters	per ton	2000.00	2000.00
⅝" x 11 meters	per ton	2000.00	2000.00
¾" x 11 meters	per ton	2000.00	2000.00
⅞" x 11 meters	per ton	2000.00	2000.00
1" x 11 meters	per ton	2000.00	2000.00
Gravel truck load at 3½ cu. meters		Sept. '57	Oct. '57
Blue Gravel	per tr. load	75.00	75.00
Rose Gravel	per tr. load	73.00	65.00
Cement, Std. Port. (Tolteca)	per ton	240.00	240.00
Lumber			
1" Pine	per M ft.	1400.00	1700.00
1½" Pine	per M ft.	1650.00	1900.00

ABOVE: Wall of steel—Armco Bin-Type Retaining Wall—provides foundation for access road along canyon.



RIGHT: Armco Retaining Wall was assembled on the slope from easy-to-handle units that were bolted together to form interconnected bins.

Armco Construction

Canyon Wall of Steel Solves Roadbuilding Problem, Saves Money

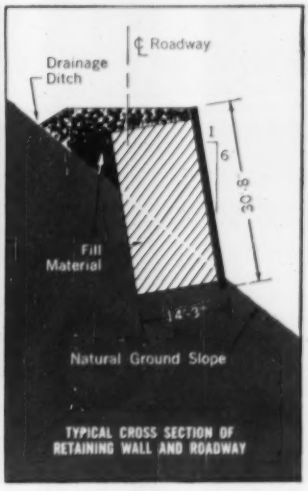
How would you build a road along the steep wall of a canyon where: (1) there was no space to operate heavy equipment; (2) a side-hill cut would add excessive costs and threaten stability of the slope?

Here's how the problem was solved in the Feather River Canyon in California, where the Pacific Gas & Electric Company needed an access road to the site of their new Poe Power project.

An Armco Bin-Type Retaining Wall was erected on the downhill side of the proposed route of the road along the face of the canyon. The wall is made up of a series of interconnected steel bins, assembled at the site from easy-to-handle units. All connections are bolted. Backfill was placed inside and behind the bins —thus providing a foundation and a level area for the road. See sketch.

In all, the Armco Wall extends almost 1,000 feet up the canyon, changing grade and height, and making 11 curves ranging in radius from 70 feet to 976 feet.

The filled bins of the Armco Wall provide the stability to hold the road plus space for the right-of-way—at a fraction of the cost of extensive earth moving. This is only one of many jobs Armco Walls can do in retaining earth, controlling slopes and preventing erosion. For complete data, write us. Armco Drainage & Metal Products, Inc., 5797 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.



TYPICAL CROSS SECTION OF RETAINING WALL AND ROADWAY

ARMCO®

These Too Are Armco Products, To Help Make Your Construction Job Easier . . . RESULTS BETTER

Armco Pipe Piling and Pipe Shells... Welded Steel Pipe for Water Supply Systems

Water Control and Sewage Gates

Sheeting

Steel Buildings

Bridge Plank

Corrugated Metal Drainage Structures

Guardrail

Products

Architect: Conner and Pojezny, Oklahoma City. Engineer for roof construction: P. F. Blair and Sons, Tulsa. Contractor: Grammar Constr. Co., Tulsa.

Only four precast, prestressed concrete beams used in roof of 100′ x 130′ gymnasium

The roof of the Pryor High School gymnasium in Pryor, Okla. is supported by only four 100-ft. precast, prestressed concrete girders. These girders, at 26-ft. centers, carry 2-ft. by 26-ft. precast concrete roof channel slabs. Even the diaphragms are precast concrete.

Prestressed as well as precast concrete units were also used in the gymnasium seating. The L-shaped bleacher seats are precast concrete in 20-ft.-long units and are supported by 35-ft. prestressed concrete beams.

Prestressed concrete girders are ideal for long, unsupported spans such as used in gymnasiums and auditoriums. And they can be thinner than conventionally-reinforced girders designed for the same load. Precasting girders and channel slabs saves time and money by reducing forms and using assembly-line methods.

For more information on construction utilizing precast and prestressed concrete units write for helpful free illustrated literature. Distributed only in the United States and Canada.

PORTLAND CEMENT ASSOCIATION

Dept. A10e-17, 33 West Grand Avenue, Chicago 10, Illinois

A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work

Bids Asked—Low Bidders—Contracts Awarded—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, M. E. SCIORRA, D. TARTAGLIA, Reports
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
November 12 Connecticut
STREETS AND ROADS
November 5 Massachusetts November 12 Connecticut

▲† **Massachusetts**—BA On Or About 12/3—U. S. Eng., 150 Causeway St., Boston, Zone 14, Hodges Village Dam and appurtenant structures, French River, Oxford, CIVENG-19-016-58-30. $1,860,000 appropriated.

BUILDINGS—BA

▲ **Conn., New London**—HOSPITAL ADDNS.—BA 11/12—Lawrence & Memorial Associated Hospitals, Montauk Ave., 2 hospital wing addns. for 306 beds. $3,500,000. York & Sawyer, 101 Park Ave., New York, N. Y., archts. Jansen & Rogan, 500 Fifth Ave., New York, N. Y., engrs. CD 12/4/56.

▲ **Mass., Boston**—DORMITORY—BA 12/5—Boston University, Bd. Trustees, c/o Business Mgr., 755 Commonwealth Ave., Proj. No. Mass. 19-CH-6(D) Women's Residence Hall, Bay State Rd. $2,000,000 Extended date. Plans deposit $60. Harbeson, Hough, Livingston & Larson, Architects Bldg., Pa., archts. CD 10/18.

BUILDINGS—SLC

▲ **Mass., Fall River**—HOSPITAL—Union Hospital, 538 Prospect St., soon lets contract hospital addn., alterations, Prospect St. $1,425,000. Curtin & Riley, 45 Newbury St., Boston, Mass., archts. CD 10/4.

▲ **Mass., Haverhill**—HOSPITAL—City, Supt. Bldgs., City Hall, soon lets contract hospital addn., alterations, Buttonwoods Ave. $1,000,000. Clinton F. Goodwin, 25 Washington Sq., archt. CD 10/8.

HEAVY CONSTRUCTION—LB & CA

▲ **NEW HAMPSHIRE**—Dpt. P. Wks. & Hys., Concord, **The Lane Constr. Corp.**, 965 E. Main St., Meriden, Conn., LB $1,469,426 hot b. conc. roadway, 4 lanes divided 2.06 mi. and 4 bridges Int. Rte. 3, Bow-Concord. Bids Oct. 18. CD 10/10.

† **Welbilt Constr., Inc. & D. Annolfo Constr. Co.**, P.O. Box 26, Stoneham, Mass., CA $890,130, est. $851,900, family housing HGS (M.C.A.) Boston Defense Area, Burlington, Nahant, Wakefield, Wayland and Needham, ENG-19-016-57-215, MASSACHUSETTS. U. S. Eng., 150 Causeway St., Boston, Mass. Bids July 16. CD 7/23, under LB.

BUILDINGS—LB & CA

▲ **Harvey Constr. Co.**, 1662 Elm St., Manchester, N. H., CA $1,183,224, est. $1,000,000, HIGH SCHOOL, Park Ave. and Landry Rd., HAMPTON, N. H. Co-operative School Dist., Towns of Hampton, Seabrook, Hampton Falls and North Hampton, Hampton, N. H. Bids Oct. 8. CD 10/14, under LB.

▲ **J. Slotnick Co.**, 99 Chauncy St., Boston, Mass. LB $1,045,000 MEDICAL BLDG., BURLINGTON, VT. University of Vermont and State Agricultural College, Burlington, Vt. Bids Oct. 17. CD 9/25.

Abel Builders, 139 Griswold Dr., West Hartford, Conn., Owner Builds. $907,200. 63 HOUSES, "Wells Acres", Plainville Ave., FARMINGTON, CONN. CD 6/20.

▲ **Green Manor Estates, Inc.**, Middle Turnpike West, Manchester, Conn. Owner Builds. $3,547,500, 250 HOUSES, "Green Manorville", second section, HAZARDVILLE, CONN. Arnold Lawrence, 571 Porter St., Manchester, Conn., archt.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
November 5 Maryland November 7 New Jersey
November 21 New York
STREETS AND ROADS
November 5 Maryland November 7 New Jersey
November 15 Pennsylvania November 21 New York

N. Y., New York—BA 11/6—Bd. Water Supply, 120 Wall St., Contr. 448, furnishing, del., erecting about 3 mi. cable guide railing and about 4 mi. wire fencing, incl. gates, removing and disposing about 2,700 ft. existing railing and fencing and repairing and rehanging certain existing gates are included in work to be done under this contract along Delaware system in Delaware, Sullivan, Ulster, Orange, Dutchess, Putnam and Westchester Counties. Plans deposit $5. CD 1/27/50.

▲ **Pa., Rochester**—BA 11/7—Municipal Auth. of Beaver Co., Beaver, substructure of bridge, incl. abutment Monaca side and Piers 2, 3, 4, $900,000., superstructure roadway navig. light., toll booth, total collect. facilities $2,000,000, above work in Rochester-Monaca. Michael Baker Jr., Inc., Municipal, Engr. in Beaver, engr. Extended date. CD 9/30, under Pa., Beaver.

BUILDINGS—BA

▲ **Pa., Camp Hill**—SCHOOL—BA 11/14—West Shore Senior High School Auth., 7th and Walnut Sts., Lemoyne, high school bldg., Carlisle Rd. south of Lemoyne, Lower Allen Twp. $2,500,000. Plans deposit $50. Lawrie & Green, 321 N. Front St., Harrisburg, archts. CD 5/26/55.

Pa., Freedom—SCHOOL—BA 11/19—Pa. Pub. School Bldg. Auth., 101 S. 25th St., Harrisburg, elementary schcol addn. for Freedom-New Sewickley Joint School Dist. $800,000. Plans deposit $35 each contract. F. J. Dickerson, 1902 7th Ave., Beaver Falls, archt. CD 7/9/56.

▲ **N. Y., Rockaway**—HOUSING—BA On Or About 11/26—New York City Housing Auth., 299 Broadway, New York, Zone 7, Proj. NYS-55, 148-apartment extension to Redfern Houses, Redfern Ave. and Hassock St. $1,400,000. Simon Heller, 38-11 Union St., Flushing, archt. CD 6/26.

▲ **N. Y., Brooklyn**—HOUSING—BA 12/17—New York City Housing Auth., 299 Broadway, New York, Zone 7, Proj. NYC-33 (city) John F. Hylan Houses, incl. 206 apartments, Moore St., Humboldt St., Siegel St. and Bushwick Ave. $2,000,000. Extended date. Keally & Patterson 17 E. 49 St., New York, Zone 19, archts. CD 6/26.

▲ **N. Y., Brooklyn**—HOUSING—BA 12/17—New York City Housing Auth., 299 Broadway, New York, Zone 7, Proj. NYS-73, Bushwick Houses, incl. 1,220 apartments Humboldt St., Moore St. and Bushwick Ave., Flushing Ave. $12,000,000. Extended date. Keally & Patterson, 17 E. 49 St., New York, Zone 19, archts. CD 6/26.

▲ **N. Y., Freeport**—SCHOOL—BA 12/6—Bd. Educ. Union Free School Dist. No. 9, Freeport High School Freeport, Freeport High School, Brookside Ave. $4,000,000. Frederick P. Wiedersum Assocs., 85 W. Hawthorne Ave., Valley Stream, archt. CD 5/23, under LB.

▲ **N. J., Belmar**—SCHOOL—BA 12/18—Bd. Educ., Wall Twp., 708-9th Ave., Junior-Senior High School, Wall Twp., $1,991,000, Micklewright & Mountford, E. Stuyvesant Ave., Trenton, archts. CD 6/20/56.

HEAVY CONSTRUCTION—LB & CA

▲ **Allis-Chalmers & S. Morgan Smith**, P. O. Box 512, Milwaukee 1, Wis., CA $11,083,350 del., furnishing 28,000 hp. hydraulic pump turbines for Tuscarora Pump Power Plant, Niagara Power Proj. Spec. PA-N-24001, Niagara Contr. No. NP-1, NEW YORK Power Auth. of State of New York, The Coliseum Tower, 10 Columbus Circle, New York 19, N. Y. Bids Oct. 1. (Contract is contingent on FPC issuing license) CD 8/22.

▲ **NEW YORK**—Dpt. P. Wks., Gov. Alfred E. Smith State Office Bldg., Albany,
N. Y.—**John Arborio, Inc.**, N. Cedar St., Poughkeepsie, N. Y. CA $2,290,177. 5.19 mi. (4.24 acc.) Palisades Interstate Parkway, Section 2 (Rte. 3030-Rte. 49A) Rockland Co.,
N. Y.—**Rapone Contg. Corp.**, 399 Duffy Ave., Hicksville, N. Y. CA $1,271,293. 2.46 mi. Rte. 110, Huntington-Amityville, Par. 1, SH 794, Suffolk Co. Bids Sept. 19, awarded Oct. 11. CD 9/25, under LB.

▲ **NEW YORK**—Triborough Bridge & Tunnel Auth., Randall's Island, New York, Zone 35,
TBTA—**Merritt-Chapman & Scott Corp.**, 261 Madison Ave., New York, N. Y., LB $7,490,790 (4 bidders) Contr. TN-3, two tower piers at Bronx and Queens and for Throgs Neck Bridge, Bronx and Queens Counties. Bids Oct. 23. Ammann & Whitney, 111 Eighth Ave., New York, N. Y., consult. engrs. CD 9/23.
TBTA—**Bethlehem Steel Corp.**, E. 3 St., Bethlehem, Pa., LB $10,157,664 (4 bidders) Contr. TN-5, towers for Throgs Neck Bridge.
TBTA—**American Bridge Div.**, U. S. Steel Corp., 71 Broadway, New York, N. Y., LB $6,291,739 (2 bidders) Contr. TN-6, cables for Throgs Neck Bridge. CD 1/20/55.

▲ **Hendrickson Bros., Inc.**, 63 N. Central Ave., Valley Stream, N. Y. LB $2,687,637. (3 bidders) lateral sewers at New Hyde Park, Garden City Park and vicinity towns of Hempstead and North Hempstead Sewage Collection Dist. N1 2-NHP2-Contr. 1002-2-NHP-2 MINEOLA, N. Y. Nassau Co. Executive, Nassau Co. Old Court House, Mineola, N. Y. Bids Oct. 15. CD 10/10.

Ace-Stone, Inc., 710 Bloomfield Ave., Glen Ridge, N. J., LB $590,075. Contr. 900, connection sewer, Section IV, Yonkers Joint Sewer Proj., Yonkers, WHITE PLAINS, N. Y. Dpt. P. Wks., Westchester Co., County Office Bldg. White Plains, N. Y. Bids Oct. 23. CD 10/11.

▲ **PENNSYLVANIA**—Commonwealth of Pa., Dpt. Hys., 506 North Office Bldg., Harrisburg,
Lycoming Constr. Co., 127 Susquehanna St., Williamsport, Pa. CA $8,867,834. constr. divided hy. consisting c. conc. pavt., variable in width 37,593 ft., incl. 1-beam bridge, 2 rein.-con. arches, 8 rein.-con. box culverts, 1 plate girder bridge, rein.-con. 3 I-beam and 4 optional superstructure bridges, also constr. intersecting hys., streets, twps. roads ramps and service roads with c. con. pavt., crushed aggreg. base with bit. surf., selected material surf. of various widths and incl. 1 optional superstructure, 2 rein.-con., 2 prestressed precast rein.-con. box culvert within an overall length of 53,204 ft. beginning in North York Boro, bypassing New York City in a southerly direction, incl. York, Spring Garden, Springettsbury, Manchester Twps. and North York Boro, Rte. L.R. 789 (1) T.R. III., Federal Interstate Proj., York Co. Bids Aug. 30, awarded Oct. 21. CD 9/5, under LB.

▲ **MARYLAND**—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,
Michael F. Kline Co., Frederick, Md., LB $1,622,363 (6 bidders), grading, drainage, surf. 2.25 mi. Frederick By-Pass Interchanges near Frederick, Frederick Co. Bids Oct. 22. CD 10/15.

BUILDINGS—LB & CA

▲ **George A. Fuller Co.**, Munsey Bldg., Wash., D. C. CA Est. $3,000,000. 176,000 sq. ft. steel, brick APPARATUS BLDG. and parking area, BIG FLATS, N. Y. Corning Glass Works, Corning, N. Y. and 718 Fifth Ave., New York, N. Y. Bids Sept. 9. CD 8/30.

▲ **Irving Berger & Assoc.**, c/o A. H. Salkowitz, archt., 87-25 Homelawn St., Jamaica 32, N. Y., Separate Contracts, $1,500,000. SHOPPING CENTER, Jericho Turnpike and Commack Rd., COMMACK, N. Y. CD 3/1.

▲ **Gramercy Gardens Homes**, c/o Albert B. Meklenburg Organization, 1038 Northern Blvd., Roslyn, N. Y., Owner Builds. $1,400,000. 100 HOUSES, Oakland Ave., west of Deerpark Ave., DEER PARK, N. Y.

▲ **Gramercy Gardens Homes**, c/o Albert B. Meklenburg, 1038 Northern Blvd., Roslyn, N. Y. Owner Builds. $3,000,000. 220 HOUSES, Oakland Ave., near Deer Park Ave., DEER PARK, N. Y. Max Rosenfeld, 89-31 161 St., Jamaica 32, N. Y., archt.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England — **Middle West**
Middle Atlantic — **West of Mississippi**
South — **Far West**

PROPOSED WORK
Water Supply — **Public Buildings**
Sewers, Waste Disposal — **Mass Housing**
Bridges — **Commercial Buildings**
Streets & Roads — **Industrial Buildings**
Earthwork, Waterways — **Unclassified**

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.
BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.
SOON LETS CONTRACT: SLC
LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily issue in which last previous report was published.

OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over.
ENR Engineering News-Record
CD Construction Daily

For additional reports see Construction Daily.

▲ **Dobbs Ferry Syndicate,** c/o Tito Di Vincenzo, archt., 135 E. 65 St., New York 21, N. Y., Owner Builds. $1,300,000. GARDEN APARTMENT, for 145 families on 25-acre tract, Ogden Ave., DOBBS FERRY, N. Y.

▲ **Shore Lane Estates,** c/o Lane Realty Co., 107-40 Queens Blvd., Forest Hills, N. Y. Owner Builds. $1,000,000. 44 HOUSES, Bayview Ave. and Lagoon Blvd., MASSAPEQUA, N. Y.

Bayberry Homes, c/o Richland Realty, Inc., Pine Park Dr., New Rochelle, N. Y. Owner Builds, $850,000. 29 HOUSES, Pinebrook Blvd., NEW ROCHELLE, N. Y.

▲ **Gilbane Constr. Co.,** 90 Calverly St., Providence, R. I., CA Est. $50,000,000. SHOPPING CENTER, HOTEL 2 OFFICE BUILDINGS, GARAGE, etc., on 15-acre tract on both sides of North Ave., NEW ROCHELLE, N. Y. New Rochelle Development Corp., 302 North Ave., New Rochelle, N. Y. Boak & Raad, 175 Fifth Ave., New York 10, N. Y., archts. Greenhut & Tafel, 114 E. 32 St., New York 16, N. Y., engrs. CD 4/18.

Evon Estates, c/o Albert B. Meklenburg Organization, 1038 Northern Blvd., Roslyn, N. Y. Owner Builds. $950,000. 68 HOUSES, Nesconset Parkway south of Jericho Turnpike, ST. JAMES, N. Y.

▲ **D. Cermele & Sons,** 145 Seton Place, South Orange, N. J. Own Forces. $1,125,000. 36 HOUSES, Route 206 on site of former ski path, to be known as Ski Hill, BEDMINSTER, N. J.

Alex Gottdiener & Assocs., operating as Woodland Constr. Co., 1369 North Ave., Elizabeth, N. J. Own Forces. $800,000. 33 HOUSES, Butler St. and Arden Court, known as Saw Mill Estates, BERKELEY HEIGHTS, N. J.

Piedmont Bldrs., Inc., 195 Farm Lane, Bound Brook, N. J. Own Forces. $850,000. 30 HOUSES, School House Lane and Piedmont Drive, known as Piedmont Farms, BOUND BROOK, N. J. Geo. Boylan, 729 Raritan Ave., Highland Park, N. J., archt.

▲ **Forest Cliffs Estates,** c/o Frank J. Dupignac, 311 S. Washington Ave., Bergenfield, N. J., Owner Builds. $1,240,000, 31 HOMES, Roberts Rd., off Johnson Ave. and N. Woodland St., ENGLEWOOD CLIFFS, N. J.

▲ **Paul Romm & Lou Gans,** 149 Audry Dr., Long Beach, N. Y., Own Forces, $1,500,000, 31 HOUSES forming Forest Cliffs Estate, Robert Rd. and North Woodland Ave., ENGLEWOOD CLIFFS, N. J. Livo J. Segalla, 200 Main St., Fort Lee, N. J., archt.

▲ **Carl B. Ellison,** Route 10, Denville, N. J., Owner Builds, $1,250,000, 52 HOUSES, Littleton Rd. to be known as Deerfield Estates, PARSIPPANY-TROY HILLS, N. J. Rudolph Novak, 89 Central Ave., Clifton, N. J., archt.

▲ **John J. & Anthony J. DiMarco,** 7939 Frankford Ave., Phila., Pa., Separate Contracts. $1,500,000. RESIDENTIAL DEVELOPMENT, Cedar Rds., etc., ABINGTON, PA.

▲ **John J. McDonnell, Inc.,** 69th and Market Sts., Upper Darby, Pa. CA $1,257,400 general contract Franklin D. Roosevelt HIGH SCHOOL, BRISTOL, PA. Bristol Twp. School Auth., Rogers Rd., Bristol, Pa. Bids Sept. 24. CD 10/3, under LB.

▲ **Stone & Webster Eng. Co.,** 49 Federal St., Boston, Mass. CA Est. $30,000,000 design and constr. Elrama Steam electric generating station, near CLAIRTON, PA. Duquesne Light Co., 435 6th Ave., Pittsburgh 19, Pa.;
Babock & Wilcox, 161 E. 42 St., New York, N. Y., boilers and pulverizers (Clairton, Pa.)

Dill Constr. Co., Latrobe, Pa., CA Est. $600,000, 1 story, 6,500 sq. ft. Bldg. addn., DERRY, PA. Westinghouse Electric Corp., 3 Gateway Center, Derry, Pa. Bids Oct. 5. CD 10/7.

John P. Donovan, 225 S. 15th St., Phila., Pa., CA $586,000 general contract. JUNIOR HIGH SCHOOL addn., for Ridley Twp. School Dist., FOLSOM, PA. Pa. School Bldg. Auth., 101 S. 25th St., Harrisburg, Pa. Bids Oct. 10. CD 10/16, under LB.

▲ **M&L Constr. Co., Inc.,** 108 S. 40th St., Phila., Pa. LB $1,083,121, est. $1,509,865, JUNIOR HIGH SCHOOL, North Wales Rd., LANSDALE, PA. North Penn Joint School Auth., Lansdale, Pa. Bids Oct. 17. CD 10/2.

Ritter Brothers Inc., 1511 N. Cameron St., Harrisburg, Pa., CA $852,203. general contract COLEMAN HALL, LEWISBURG, PA. Bucknell University, Lewisburg, Pa. Bids Sept. 24. CD 9/20.

▲ **Alger-Rau & Assocs., Inc.,** 17024 Miles Ave., Cleveland, Zone 28, O., LB $1,423,400 general constr. SECONDARY BLDG. for Hickory Twp. School Dist., MERCER, PA. State Pub. School Bldg. Auth., 101 S. 25th St., Harrisburg, Pa. Bids Oct. 15. CD 9/24.

P. Agnes, 2213 S. Broad St., Phila., Pa., LB $716,946 general contract ELEMENTARY SCHOOL, 18th St. and Snyder Ave., PHILA., PA. Bd. Educ., 21 and Winter Sts., Phila., Pa. Bids Oct. 18. CD 10/8.

▲† **McCloskey Co.,** 1620 W. Thompson St., Phila., Pa., LB $20,933,000 (6 bidders), SOCIAL SECURITY HEADQUARTERS, BALTIMORE, MD: General Services Admin. 19 and F Sts. N.W., Wash. 25, D. C. Bids Oct. 17. CD 9/27;
Otis Elevator Co., 101 20th St. N.W., Wash., D. C. LB $732,299 (3 bidders), elevators for Social Security Headquarters (Baltimore, Md.);
The Peelle Co., 47 Stewart Ave., Brooklyn, N. Y. LB $395,225 (4 bidders), moving stairways for Social Security Headquarters (Baltimore, Md.).

▲ **Standard Constr. Co.,** 1010 Vermont Ave. N. W., Wash., D. C., LB $4,556,081 (2 bidders) 422 dwelling units, HOUSING Proj. DC 119, Kenilworth Courts, WASH., D. C. National Capitol Housing Auth., 1729 New York Ave. N.W., Wash., D. C. Bids Oct. 17. CD 9/20.

▲ **Pau-Mar Constr. Co.,** 2401 Pennsylvania Ave., Wilmington, Del. Own Forces, 15 story APARTMENT, known as Montchanian Apartments, 2401 Pennsylvania Ave., WILMINGTON, DEL. $5,500,000. CD 5/2/56.

S&S Builders, Inc., 2216 Penna Ave., Wilmington, Del., Separate Contracts. $875,000, RESIDENTIAL DEVELOPMENT, West Park Section, Greenwood Ave., etc., WILMINGTON, DEL.

SOUTH

HEAVY CONSTRUCTION—LB & CA

Va., Norfolk—MUNICIPAL AIRPORT—BA 11/5—Norfolk Port Auth., Bd. Trade Bldg., 2 story addn., 1 story addn., alterations, etc., Norfolk Municipal Airport, incl. access road, airplane parking aprons. $750,000-$1,000,000. Plans deposit $25. Vernon A. Moore, 716 West 20th St., archt.

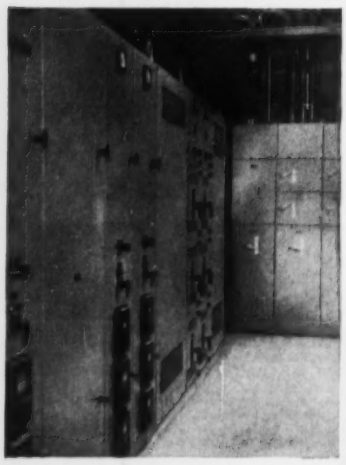
BUILDINGS—BA

La., Leesville—SCHOOL—BA 11/7—Vernon Parish School Bd., Curtis Bradshaw, supt., Leesville, Proj. No. La-58-3-3-C8, high school. $500,000-$1,250,000. Plans deposit $50. Neild-Somdal Assocs., 960 Jordan St., Shreveport, assoc. archts.

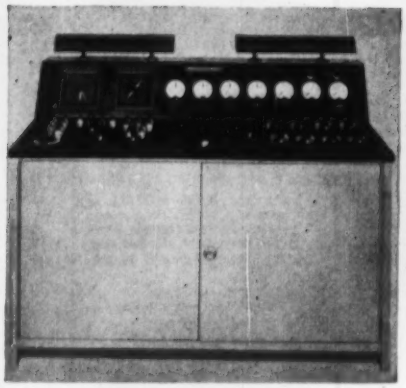
▲ **Ala., Birmingham**—OFFICE—BA 11/26—Pub. Bldg. Auth., City, City Hall, Social Security Bldg. alterations, addns. $1,000,000. Plans deposit $50. Charles McCauley, Jackson Bldg., archt.. CD 5/3.

HEAVY CONSTRUCTION—LB & CA

▲ **VIRGINIA**—Commonwealth of Va., Dpt. Hys., 1221 E. Broad St., Richmond, Bids opened Oct. 16,
Va.—**Nello L. Teer Co., Inc.,** Box 1131, Durham, N. C. LB $2,777,693 (14 bidders) 2 lanes 24 ft. x 7½ in. b. conc. pavt. and 4 bridges 4.89 mi. Rte. 402 0.84 mi. n. of NCL Buchanan, ending at 0.27 mi. south of Interstate Rte 610 State Proj. 8011-01-02-03-04-05-06 Fed. Proj. I-200-2 (2) R/W (1) Botecourt Co.; LB $974,501 (13 bidders) 2.13 mi. Rte 402; 407 beginning at 3.73 mi. E. Tenn. line ending 4.97 mi. E. Tenn. line and NCL Bristol, 0.89 mi. N. of NCL Bristol State Proj. 8095-01; 8395-01 Fed. Proj. I-202 1 (1) I-207-1 (1) Washington Co.;
Va.—**G. C. Dawson Contractor,** White Stone, Va. LB $110,810 (4 bidders) 20 x 26 ft. and various soil aggreg. bit. surf. treatment 1.94 mi. Rte 14 beginning 0.1 mi. South Interstate Rte 602 ending 0.05 mi. S. Interstate Rte 604 (Susn P. O.) State Proj. 3757-07 Fed. Proj. S-944 (2) Mathews Co.;

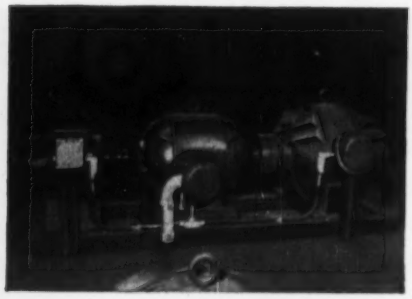


Westinghouse air-cooled power center transforms high voltage utility supply and distributes power for all bridge services. Compact and centralized control center shown at rear assures better motor control and greater savings.



Nerve center of action for the busy span. This Westinghouse control desk centralizes operation and indicates performance of bridge drives.

WESTINGHOUSE LIFTS IT



Westinghouse motor-generator set supplies power for regulated D.C.A.V. drive system.

South Park Avenue lift bridge . . .
Buffalo, N. Y.

Va.—**Barnhill & Long**, Tarboro, N. C. LB **$937,934** (8 bidders) grade, drain 7.22 mi. Rte 401 beginning at N. C. State Line 3.79 mi. S. of Interstate Rte 58 State Proj. 8040-12-19 Fed. Proj. I-201-1 (2) R/W (8) Greensville Co.;

Va.—**F. M. Arthur Constr. Co.**, Rescue, Va. LB **$91,924** (9 bidders) 16 ft. various soil aggreg. and 165 ft. bridge, 1.87 mi. Rte 614 0.03 mi. S. Interstate Rte 651 ending Interstate Rte 360 State Proj. 1341-26-27 Fed. Proj. S-1006 (1) Halifax Co.;

Va.—**W. H. Scott**, Box 418, Franklin, Va., LB **$128,753** (6 bidders) soil aggreg. base bit. surf. treatment 5.61 mi. Rte 641 beginning at Interstate Rte 258 (near Walkers) and ending at Interstate Rte 645 (near Zuni) State Proj. 1346-12-13 Fed. Proj. S-1026 Isle of Wight Co.;

Va.—**W. E. Graham & Sons**, Box 268, Cleveland, Va. LB **$853,892** (11 bidders) 24 ft. x 5½ in. b. conc. 1.06 mi. Rte 220 58, and 502 ft. bridge beginning at 1.34 mi. s. of SCL Matinsville, State Proj. 1844-30-31-32 Fed. Proj. F-03-3 (4) Henry Co.

▲ **WEST VIRGINIA** — State Rd. Comn., Charleston, Zone 5,

V. N. Green Co., Inc. & Charleston Constr. Co., 1640 4 Ave., Charleston, W. Va., CA **$1,188,577**, c. conc. 2.282 mi. Wellsburg Relocation Rd., Proj. F 175(17), Brooke Co. Bids Sept. 24, awarded Oct. 18. CD 10/1, under LB.

▲ **GEORGIA**—State Hy. Dpt., General Office No. 2, Capitol Sq., Atlanta,

Ga.—**R. G. Foster & Co.**, Drawer 8, Wadley, Ga. LB **$1,593,625**, wid'n., reconstr. resurf. and reconstr. 1 bridge 27.407 mi. on what is locally known as Swainsboro-Lyons Rd., State Rte. 4, U. S. Rte. 1, F-043-1 (10) and F-038-1 (4), Emanuel and Toombs Counties;

Ga.—**W. L. Cobb Constr. Co.**, 3488 E. Ponce de Leon Ave., Atlanta, Ga. LB **$568,388**, grading, paving, 13.121 mi. on what is locally known as Monticello-Porterdale Rd., State Rte. 062 Fed. Aid Sec. Proj. S-1242 (1), Jasper and Newton Counties;

Ga.—**Holland Constr. Co.**, Mt. Vernon, Ga. LB **$226,-559**, grading, paving 11.651 mi. on what is locally known as Broxton-Hazelhurst Rd., State Rte. 107 and 268, Fed. Aid Sec. Proj. S-0587 (1), Jeff Davis Co.;

Ga.—**W. L. Robinson**, College Park, Ga. LB **$311,525**, grading, paving, 1 bridge 9.686 mi. on what is locally known as Valdosta-Howell Rd. FAS Route 568, Fed. Aid Sec. Proj. S-0568 (2), Lowndes and Echols Counties;

Ga.—**G. H. Law Constr. Co.**, 1229 W. Broad St., Gainesville, Ga. LB **$399,368**, grading, paving, 2 bridges 7.216 mi. on what is locally known as Good-Hope-High Shoals Rd., State Rte. 186, Fed. Aid Sec. Proj. S-0914 (1), Walton, Morgan and Oconee Counties. Bids Oct. 18. CD 10/9.

▲ **FLORIDA**—State Rd. Dpt., Tallahasee,

W. L. Cobb Constr. Co., Box 977, Tampa, Fla., CA **$1,162,919**. 8½ in. limerock base, b. conc. surf. course with binder course, storm sewers, etc. 4.44 mi. from east city limits of Apopka northwest to Plymouth, S. P. Job No. 7502-105, SR 500, Orange Co. Bids June 23, awarded Oct. 16. CD 7/3, under LB.

FLORIDA—State Road Dpt., Tallahassee,

rejected bids Sept. 19, limerock wid'n., strips, limerock overbuild b. conc. sur. course with binder course, extending 12 existing concrete box culverts 14.449 mi. SR 15, Job 9206-122, Osceola Co., LB **$888,081**. Will re-advertise. CD 9/27, under LB.

▲ **ALABAMA**—State Hy. Dpt., Montgomery, Bids opened 10/11.

Ala.—**Locust Fork Constrs. Inc.**, Cleveland, Ala., LB **$131,375** bit. 5.911 mi. part of Boston-Eldridge Rd. Marion Co.; LB **$85,725** bit. 3.991 mi. from Waysied to Lamar Co. Line, Fayette Co.; LB **$144,336** bit. 9.53 mi. part of Walker Springs-Gainstown Rd., Clarke Co.; LB **$82,344**, bit. 4.363 mi. Gordo-Echola Rd., Pickens Co.; LB **$102,185**, grading, draining 8.845 mi. part of Dallas Co. Line-Dawson Mill Rd. and spur, Autauga Co.;

Ala.—**M. A. Evans Constr. Co.**, Wetumpka, Ala., LB **$87,730** base and bit. 7.126 mi. from Jefferson Northwest to U.S. 80, Marengo Co.; LB **$705,414**, grading, draining 6.859 mi. from east of Auburn to east of Opelika on Interstate Rte. I-203, Lee Co.; LB **$267,-655** bit. 13.543 mi. on part of road from U. S. 82 to Johnstown Church, Bibb Co.; LB **$87,348**, bit. 9.517 mi. from Thornsby on Strasburg Loop and Collins Chapel to Union Grove Rds., Chilton Co.;

Ala.—**J. W. Gwin, Jr., Inc.**, Comer Bldg., Birmingham, Ala., LB **$86,576**, base, bit. 6.059 mi. Ala. 69 at Y east to Tutwiler School, Walker Co.; LB **$98,214**. base and bit. 9.073 mi. from St. Clair Co. Line N. to Harvey's Store, Blount Co.;

Ala.—**J. R. Bryant Constr. Co.**, Bell Bldg., Montgomery, Ala., LB **$336,652**. base and pavement 4.114 mi. U. S. 231 on Wetumpka Bypass, Elmore Co.; LB **$283,676**, base and bit. 5.63 mi. on Prattville Bypass, Autauga Co.;

Ala.—**Tuscaloosa Constr. Co. Inc.**, 3006 9 St., Tuscaloosa, Ala., LB **$674,123**. grading, draining 6.429 mi. from N. W. of Castleberry N. E. to Interstate Rte. I-202, Conecuh Co.; LB **$133,396**, base and bit. 9.751 mi. Randolph-Brierfield Rd., Bibb and Shelby Counties;

Ala.—**Walker Constr. Co.**, Cullman, Ala., LB **$292,932**. grading, draining 5.544 mi. U. S. 72 from Huntsville toward Scottsboro, Madison Co.; LB **$83,504** base and bit. 10.546 mi. from Cullman via Weltie to Walter, Cullman Co.;

Ala.—**Green Constr. Co. Inc.**, Union Springs, Ala., LB **$107,173**, base, bit. 14.504 mi. from near Perryville N. to Bibb Co. Line toward Centerville, Perry Co.; LB **$95,656**, base and bit. 10.13 mi. Hannon-Davisville Rd., Macon Co.;

Ala.—**Ashburn & Gray, Constr.**, Huntsville, Ala., LB **$221,113**, base and bit. 16.284 mi. Ala. 38 N. E. via Brooksville to Marshall Co. line, Blount Co.;

Ala.—**Boyd Constr. Co., Inc.**, Geiger, Ala., LB **$117,682** grading, draining 14.156 mi. Ala. 59 at Chrysler via Eliska to Palmer's X-roads-Jeddo Rd., Monroe Co.;

Ala.—**Perry Brown Constr. Co.**, Albertville, Ala., LB **$141,723**, bit. 1.184 mi. on Ala. 17 at Sulligent, Lamar Co.;

Ala.—**Burgreen Constr. Co., Inc.**, Athens, Ala., LB **$153,-811**. base and bit. 10.368 mi. Blount Co. Line N. E. to Guntersville, Marshall Co.;

Ala.—**Couch Constr. Co.**, Dothan, Ala., LB **$399,859** base, b. conc. base, and pavement 4.399 mi. U. S. 231 from Dotham to Midland City, Houston and Dale Counties;

Ala.—**L. J. Cousins**, 56 S. Lewis St., Montgomery, Ala., LB **$115,162**, bit. 3.795 mi. from Myrtlewood S. W. to Tombigbee River, Marengo Co.;

Ala.—**Dyson Constr. Co.**, Talladega, Ala., LB **$99,253**. grading, draining 7.653 mi. Bayview Delta Rd. and Spur, Clay Co.;

Ala.—**Glencoe Paving Co., Inc.**, Glencoe, Ala., LB **$84,-755**, bit. 28.6 mi. various county roads, Blount Co.;

Ala.—**M & W Constr. Co.**, Tupelo, Miss., LB **$121,570**, bit. 0.584 mi. U. S. 431 between Attalla and Guntersville, Etowah Co.;

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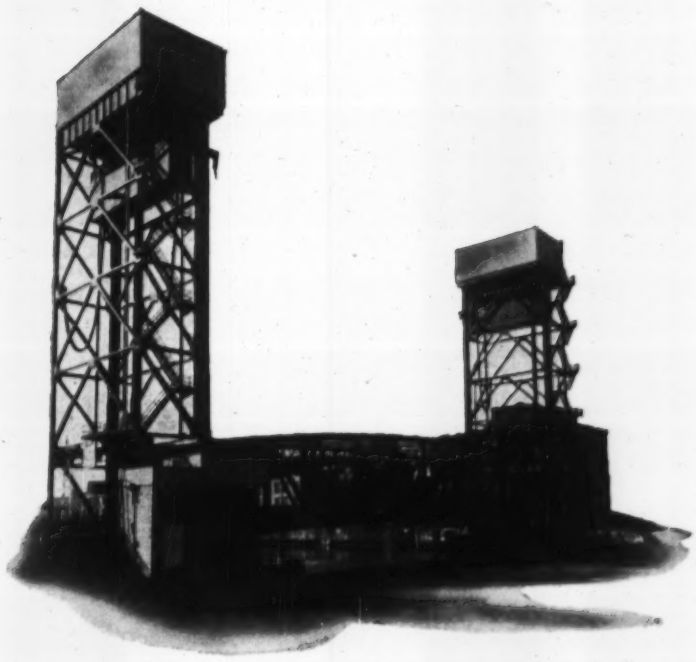

The Buffalo, N.Y. South Park Avenue Bridge has plenty of ups and downs, with heavy traffic flow on both roadway and river. The span hoist system includes controls which automatically synchronize fast-acting motor drives in each tower, assuring accurate leveling throughout entire span travel.

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Ala.—**Ed. McGinnis Constr. Co.**, Anniston, Ala., LB **$141,049**, base and bit. 9.897 mi. Leath's Gap Rd. from U. S. 11 near Gadsden via Whitesboro to DeKalb Co. Line, Etowah Co.;

Ala.—**Clyde O. Mitchell**, 104 N. 44 St., Birmingham, Ala., LB **$200,363**, bit. 10.363 mi. Ourtown-Alexander City Rd., spurs and Loop, Tallapoosa Co.;

Ala.—**Moss-Thorton Co., Inc.**, Leeds, Ala., LB **$1,242,073**, grading, draining 8.245 mi. from Red Diamond Mines to Brompton on Interstate Rte. I-204, Jefferson and St. Clair Counties;

Ala.—**Townsend Asphalt Co., Inc.**, 1015 19 Ave. E., Tuscaloosa, Ala., LB **$370,819**, bit. 3.172 mi. for widening U. S. 43 in Thomasville, Clarke Co.;

Ala.—**D. T. Underwood & Son**, 1820 28 Ave. S., Birmingham 9, Ala., LB **$196,301**, bit. 3.705 mi. Mud Creek-Lock 17 Rd., Jefferson Co.;

Ala.—**Eunice L. Vick**, Tuscumbia, Ala., LB **$116,945**, bit. 4.626 mi. Cairo-Salem Rd., Limestone Co.;

Ala.—**B. F. Williams Constr. Co.**, Ozark, Ala., LB **$94,014**, bit. 6.002 mi. on Capps-Tolbert Church Rd., Henry Co.;

Ala.—**Walker Constr. Co.**, Cullman, Ala. and **Glencoe Paving Co., Inc.**, Glencoe, Ala., LB **$2,622,303**, c. conc. 6.715 mi. near Blount Co. Line on Interstate Rte. I-202, Proposal "A", Cullman Co.;

Ala.—cancelled bids to have been opened Oct. 11, grading, drainage, paving 8.067 mi. 1.1 mi. N.E. of Clanton City Limits N.W. on Interstate Rte. I-202, Chilton Co.; bit. 24.118 mi. various county roads, Dale Co.; base and bit. 2.65 mi. from Alternate US 231 westerly to Odesa Church, Talladega Co.; bit. 13.872 mi. Brookwood-Searles Rd. and from U. S. 82 near Coker N.W. to Bethany Church, Tuscaloosa Co.; bit. resurf. 20.4 mi. U. S. 43 from Mobile Co. Line N. to Wagerville Maint. Resurfacing, Washington Co. CD 9/27 and 10/1.

▲ **FLORIDA**—State Rd. Dpt., Tallahassee,

Powell Bros., Inc. & Heavy Constructors, Inc., Box 281, Fort Lauderdale, Fla. CA **$3,543,994**, three 6-lane bridges totaling 3,648 ft. in length, incl. pedestal piers on 20 in. prestressed concrete piles; channel piers constr. in cofferdams and founded on steel H-pile 20 in. concrete pile bents, concrete deck on precast-prestressed concrete beams; 130 ft. channel span on steel plate girders rein.-con. flat slab spans alt. aluminum hand rail timber fenders, navigation and roadway lighting SR 25, across Biscayne Bay between Miami and Miami Beach (extensions of N. E. 36 St. in Miami and W. 41 St. in Miami Beach) Fed. Aid Proj. I-106-1 (1) Job No. 8709-401, Dade Co. Bids Sept. 19, awarded Oct. 14. CD 9/25, under LB.

▲ **TENNESSEE**—State Hy. Dpt., Nashville,

Tenn.—**Tillett Brothers**, Shelbyville, Tenn. CA **$1,763,265**. grading, drainage, 3 concrete box type bridges and 6 concrete deck girder bridges, incl. twin bridges for interchange with Kentucky St. in Kingston and interchange with Oak Ridge Turnpike on 4.883 mi. section Int. Rte. N. 503, Proj. No. I-503 (7) Roane Co.;

Tenn.—**Unaka Paving Co.**, Johnson City, Tenn. CA **$829,759**. wid'n., resurf. existing structures (except bridges) wid'n. and resurf existing pavement with bit. materials (plant mix) 18.89 mi. section State Rte. No. 16, Proj. No. F-016-1 (1) Bedford, Rutherford and Williamson Counties;

Tenn.—**Roadbuilders, Inc.**, 718 Mufreesboro Rd., Nashville, Tenn. CA **$689,188**. wid'n. existing roadway and drainage structures (except bridges) and wid'n. and bit. materials (plant mix) resurf. existing pavt. 4.986 mi. section State Rte. 24, Proj. No. SP-575-F, Davidson Co. Bids Aug. 2. Grand total $3,282,212.

BUILDINGS—LB & CA

▲† **Christian Constr. Co.**, 3143 Maple Dr., N. E., Atlanta, Ga. CA **$1,497,895**. radiation effects REACTOR and OPERATIONS BLDG., Air Force Project 114G-11, DAWSONVILLE, GA. Lockheed Aircraft Corp., Marietta, Ga. Bids Sept. 18, awarded Oct. 9. CD 9/27, under LB.

▲† **Florida Builders, Inc.**, 700 43 St. South, St. Petersburg, Fla., CA **$16,090,131**, Armed Services Housing ENG.-08-606-58-1, Patrick Air Force Base, COCOA, FLA. Contracting Officer, Air Force Missile Test Center, Patrick Air Force Base, Fla. Bids July 31, awarded Oct. 18. CD 8/6, under LB.

B. B. McCormick & Sons, Box 248, Jacksonville, Fla., CA **$687,000**, off-site facilities and utilities (Capehart Housing Proj.) Patrick Air Force Base, COCOA, FLA. Contracting Officer, Air Force Missile Test Center, Patrick Air Force Base, Fla. Bids Aug. 21. CD 9/3, under LB.

W. A. Scott & Sons, Box 946, Americus, Ga. LB **$986,949** (10 bidders) 100-unit HOUSING, from Hodson to Lockhard Sts. and Loomis to Orange Aves., DAYTONA BEACH, FLA. Daytona Beach Housing Auth., Halifax Park, Fla. Bids Oct. 15. CD 9/24.

▲ **C. F. Wheeler Builder**, 810 NW 72 St., Miami, Fla., CA **$1,500,000**, 71-unit apartment, 3003 Terrmar St., FORT LAUDERDALE, FLA. Castilla Investment Co., Inc., c/o Charles F. McKirahan, archt., 2400 E. Oakland Park Blvd., Fort Lauderdale, Fla. Bids Oct. 8. CD 10/15, under LB.

▲ **Mills & Jones**, 2260 Fourth Ave. S., St. Petersburg, Fla., CA Est. **$20,000,000** general contract BREWERY in Industrial Park, Temple Terrace, TAMPA, FLA. Anheuser-Busch, Inc., 721 Pastalozzi St., St. Louis 18, Mo. CD 8/6.

▲ **Kenneth Smith Constr. Co.**, 219 Magnolia Ave., Daytona Beach, Fla. CA **$1,671,737**, FLA. 8-CH-20 (D), 272 unit COLLEGE HOUSING, near Radio and Archer Rd., GAINESVILLE, FLA. State Bd. Control, Administration Bldg., University of Florida, Gainesville, Fla. Guy C. Fulton, Bldg. E. University of Fla., Gainesville, Fla., superv.-archt. Jefferson W. Hamilton, 114 N E 17th St., Gainesville, Fla., consult.-archt. Bids Sept. 18, awarded Oct. 15. CD 10/1, under LB.

▲ **O'Brien & Padgett**, 283 Scott Ave., Memphis, Tenn. CA **$1,500,000**. 150,000 sq. ft. residential air conditioning unit MFG. PLANT, CLARKSVILLE, TENN. The Trane Co., 206 Cameron Ave., LaCrosse, Wis. Bids Oct. 1. 10/2.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

▲ **O., Akron**—BA 12/2—at office Leo G. Walter, dir. P. Service, Municipal Bldg., Bridge Creek Dam and related work, Contract 420, incl. earth dam containing approx. 385,000 cu. yd. materials, concrete intake tower and tunnel through the dam, concrete overflow spillway, chute and stilling basin, all requiring approx. 7,250 cu. yd. concrete and misc. items of equip. for control water and operation of facility, part of City's Cuyahoga River Water Supply System in Geuga Co. Plans deposit $25. Parsons, Brinckerhoff, Hall & Macdonald, 51 Broadway, New York, N. Y., engrs.; adv. ENR 10/31. CD 10/11.

BUILDINGS—BA

▲ **O., Columbus**—JUVENILE DIAGNOSTIC CENTER ADDN.—BA 11/13—Ohio Dpt. P. Wks., State Dpts. Bldg., Proj. No. 1, 150 bed Central Reception and Classification Center addn. to Juvenile Diagnostic Center, 2280 W. Broad St. $1,500,000. Plans deposit $75. Conrad & Simpson, 1110 Hanna Bldg., Cleveland, archts. CD 5/25/56.

▲ **Wis., Appleton**—MUSIC DRAMA CENTER—BA 11/14—Lawrence College, Appleton, music drama center. $1,100,000. F. C. Shattuck Assocs., 174 E. North Water St., Neenah, archts. CD 8/29.

▲ **Wis., Greenfield (P. O. Milwaukee)**—SCHOOL—BA 11/21—Jt. Union High School Dist. No. 1, 6921 W. Cold Spring Rd., Greenfield, P. O. Milwaukee, high school. $2,000,000. Plans deposit $50. Fritz von Grossmann, 5455 W. Burleigh St., Milwaukee, Zone 10, archt. CD 6/28.

HEAVY CONSTRUCTION—LB & CA

▲ **OHIO**—Dpt. Hys., Columbus, Zone 15, Bids opened 10/15,

O.—**Launder & Sons, Inc.**, Glendale Ave., Toledo, O. LB **$3,068,072**, est. $3,475,000. c. conc. 6.523 mi. incl. continuous steel girder bridge over State Rte. 1, Montgomery Twp. Rd. 207, Br. No. ASD-1-0846; continuous steel beam bridge over State Rte. 1, Montgomery Twp. Rd. 153; continuous steel beam bridge over Katotawa Creek, Montgomery Twp. Rd. 153; continuous steel beam bridge over Katotawa Creek, State Rte. 1; continuous steel beam bridge over State Rte. No. 1, Ashland Co. Rd. No. 46; continuous steel beam bridge over State Rte. 1, State Rte. No. 89; continuous steel beam bridge over State Rte. No. 1, Perry Twp. Rd. 47; continuous steel girder bridge over State Rte. 1, Perry Twp. Rd. 203, Fed. State Proj. 530, Ashland Co.;

O.—**D. R. Smalley & Co., Celina, O. LB $2,940,165**, est. $3,337,900. c. conc. 6.295 mi. incl. substructure County Rd. 34 over State Rte. 1; continuous steel girder bridge State Rte. 521 over State Rte. 1; continuous steel girder bridge County Rd. No. 65 over State Rte. 1, State Proj. 541, Delaware Co. CD 9/23.

▲ **Consoer, Townsend & Assocs.**, 360 E. Grand St., Chicago, Ill., CA Est. **$7,700,000**, sewer expansion program, doubling size of present sewage disposal plant, installing 40 mi. 8- to 96-in. storm and sanitary sewers, MARION, IND. City, Bd. Wks., Marion, Ind.

▲ **Mount Vernon Bridge Co.**, Mount Vernon, O., CA **$2,232,000**, est. $3,000,000. superstructure of 1,620 ft. railroad bridge and approach piers, incl. vertical lift span, machinery, etc. on Illinois River at Valley City, ILLINOIS. Wabash Railroad Co. Wm. J. Hedley, ch. engr., 1420 Railway Exchange Bldg., 611 Olive St., St. Louis 1, Mo. Bids Aug. 15. CD 8/21, under LB.

▲ **MICHIGAN**—State Hy. Comn., Stevens T. Mason Bldg., Lansing,

Al. Johnson Co., Foshay Tower, Minneapolis 2, Minn., CA **$4,075,000**, est. $4,000,000, substructure double deck vertical lift bridge US-41 and M-26 over Portage Lake, between Houghton and Hancock, U B1 of 31-10-1 C5-U (U 185 22), Houghton Co. Bids Sept. 27. CD 10/3, under LB.

BUILDINGS—LB & CA

Robert W. Setterlin & Sons Co., 2000 Kenny Rd., Columbus 21, O., LB **$617,100**, general contract SCHOOL of FINE and APPLIED ARTS, COLUMBUS, O. Ohio Dpt. Wks., 705 Ohio Dpts. Bldg., Columbus, O. Bids Oct. 8. CD 9/17.

▲ **Hagerman Constr. Co.**, 403 Strauss Bldg., Fort Wayne, Ind. CA Total Est. **$1,650,000**. general contract HOSPITAL addn., 3 story addn to tower and west wing, plus second floor extension south from west wing, FORT WAYNE, IND. Bd. Trustees, Parkview Memorial Hospital, 2200 Randalia St., Fort Wayne, Ind. CD 4/4.

Arthur A. Gill & Sons, Frankford, Ind., CA Est. **$500,000**, structural steel, concrete S. Side Elementary School, FRANKFORT, IND. Community Schools, 10 N. Columbia St., Frankford, Ind. Bids Sept. 26. CD 9/5.

▲ **Jos. M. Brickman Co.**, 7830 W. Lawrence Ave., Chicago, Ill., CA **$2,984,572**, 2 story, brick, stone Wm. J. Bogan HIGH SCHOOL, 79 St. and Pulaski Rd., CHICAGO, ILL. Bd. Educ., 228 N. LaSalle St., Chicago, Ill. Bids Oct. 14. CD 9/23.

▲ **Virginia Eng. Co., Inc.**, 80 29 St., Newport News, Va., CA Approx. **$6,000,000**. window glass producing PLANT near DECATUR, ILL. Pittsburgh Plate Glass Co., 420 Fort Duquesne Blvd., Pittsburgh 1, Pa. Sverdrup & Parcel, Inc., 915 Olive St., St. Louis 1, Mo., engrs. CD 11/21/56;
American Bridge Co., 525 William Penn Pl., Pittsburgh, Pa., CA Approx. **$1,400,000**. steel fabrication and erection of site, 3,500 tons structural steel for plant (Decatur, Ill.).

▲ **Joseph A. Duffy Co.**, 4994 N. Elston Ave., Chicago, Ill., CA **$5,998,242**, 1, 2 and 3 story HIGH SCHOOL, bit. paving, concrete walks, Roosevelt and Ardmore Aves., ELMHURST, ILL. York Comm. High School Dist. 88, 355 W. St. Charles St., Elmhurst, Ill. CD 10/14, under LB.

Hope Constr. Co., 3520 N. Knox Ave., Chicago, Ill., CA **$800,000**, 175,000 sq. ft. WAREHOUSE addn., FOREST VIEW, ILL. Certified Grocers of Illinois, 1800 S. Central Ave., Forest View, Ill. CD 10/18.

▲ **Fred Berglund & Son, Inc.**, 8410 S. South Chicago Ave., Chicago, Ill., CA **$1,313,426** (a) ADMINISTRATION and ACADEMIC BLDG. (b) VOCATIONAL and TECHNICAL BLDG., addn. to present high school, Broadway, 151st and Main Sts., HARVEY, ILL. Thornton Twp. School Dist. 205, 151st and Broadway, Harvey, Ill. CD 10/7, under LB.

▲ **A. Z. Shmina & Sons**, 122 W. 4th Ave., Ann Arbor, Mich., LB **$2,387,000** (5 bidders) No. 116 Northwood APARTMENTS, ANN ARBOR, MICH. Bd. Regents, University of Michigan, Plant Service Bldg., N. University and Forest Aves., Ann Arbor, Mich. Bids Oct. 8. CD 9/16.

▲ **Rose-Hill Realty Co.**, 17300 Grand River, Detroit, Mich. Owner Builds. **$5,000,000**, brick ranch HOMES, Tull Lake-Highland Rd., WHITE OAK, MICH.

▲ **Charfoos & Topper**, 18304 Couzens Hy., Detroit, Mich., **$4,100,000**, Owner Builds. WARRINGTON PARK DEVELOPMENT, 224 brick houses, Ford and Beech-Daly Rd., DEARBORN, MICH.

▲ **Silco Homes Inc.**, 18618 Wyoming, Detroit, Mich., CA **$5,000,000**, 200 brick ranch and colonial HOMES, Everett and 12-Mile Rd., SOUTHFIELD, MICH. Ross-Hill Co., 19470 Grand River, Detroit, Mich.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
November 12, 13 Texas November 12 Texas & Oklahoma
STREETS AND ROADS
November 12, 13 Texas

▲† **Kansas**—BA On Or About 12/12—U. S. Eng., Federal Office Bldg., Kansas City 6, Mo., spillway at Tuttle Creek Dam and Reservoir near Manhattan. CD 9/5.

▲† **Oklahoma**—BA 12/12—Bureau Reclamation, Dpt. Interior, Anadarko, Fort Cobb Dam, Washita Basin Proj. near Fort Cobb; Spec. DC 4988; adv. ENR 10/31. CD 9/13.

BUILDINGS—BA

▲ **Minn., Collegeville**—DORMITORY—BA On Or About 11/8—St. John's University, Collegeville, general contract, 4 story L-shaped dormitory, est. $1,636,000. Marcel Bruer, 201 E. 57th St., New York, N. Y., assoc. archts. Traynor & Hermanson, St. Cloud, archt. CD 10/18.

▲ **Minn., Lake City**—SCHOOL, etc.—BA 11/19—Bd. Educ., Leroy Wichstrom, clk., high school addn. and elementary school. $1,375,000. Plans deposit $50. Extended date. Lang & Raugland, 802 Wesley Temple Bldg., Minneapolis, archts. CD 9/25.

▲† **Tex., Del Rio**—HOUSING—BA 11/26—Procurement Officer, Laughlin Air Force Base, Del Rio, 500-unit Capehart Housing. $7,500,000. Roscoe P. De Witt, 2025 Cedar Springs Rd., Dallas, archt. CD 11/23.

Okla., Sulphur—HOSPITAL—BA 12/3—Murray Co., Sulphur, Murray County Memorial Hospital. $450,000. Collins & Flood, 1110 Hargrove, Ardmore, archts. CD 7/23/56.

▲ **Tex., Port Arthur**—SCHOOL—BA 12/15—Port Arthur Ind. School Dist., Port Arthur, 215,000 sq. ft., masonry high school. $3,000,000. Extended date. Caudill, Rowlett & Scott, 425 S. Main St., Bryan, and J. Earl Neff, Box 1105, archts. CD 10/21.

▲† **Tex., Beeville**—HOUSING—BA About 12/16—Dist. Pub. Wks. Office, 8th Naval Dist., Naval Station, New Orleans 40, La., 225 unit Capehart Housing to be located on 2 proposed sites in general vicinity of Beeville, incl. all utilities, landscaping, streets, sidewalks, driveways, and exterior electrical distr. sys., etc. $3,000,000. CD 11/7, under Commercial Bldgs.

BUILDINGS—SLC

▲ **Iowa, Des Moines**—MAGAZINE—Cowles Magazines, Inc., 10th and Mulberry Sts., soon lets contract Look Magazine Bldg. addn. $1,000,000. Amos Emery & Assocs., 820 Locust St., archts. CD 7/22.

▲ **MO., Kansas City**—APARTMENT, etc.—Quality Hill Towers, West Terrace Redev. Corp., 910 R. A. Long Bldg., Kansas City, Mo., soon lets contract 11 story apartment, swimming pool, etc. $2,500,000. Kivett & Myers & McCallum, 1016 Baltimore, Kansas City, Mo., archts. CD 3/11.

HEAVY CONSTRUCTION—LB & CA

▲ **IOWA**—State Hy. Comn., Ames, Bids opened 10/15,
Iowa—**Ira Von Buskirk & Sons**, Howarden, Iowa, LB **$124,188**, grading 10.759 mi. Iowa 143 from Marcus north to Iowa 10 F-1036 (2), Cherokee and O'Brien Counties;
Iowa—**John T. McGuire Co.**, P. O. Box 369, Algona, Iowa, LB **$141,444**, grading 6.002 mi. relocation of Iowa 316 from Runnells northerly to Iowa 163, F-1051 (1), Polk Co.;
Iowa—**S. E. Gustafson Constr. Co.**, Sioux Falls, S. D., LB **$917,893**, grading 4.348 mi. Interstate Route 2 from point near W¼ corner Sec. 13-79-25 easterly to point near center Sec. 15-79-24, I-IG-02-3 (2), Polk Co.;
Iowa—**Booth & Olson, Inc.**, 529 Ins. Exch. Bldg., Sioux City, Iowa, LB **$256,247**, grading 7.516 mi. Interstate Route 3 from point near S¼ corner Sec. 34-87-47 northeasterly to point near center NW¼ Sec. 31-88-47, I-03-6 (6), Woodbury Co.;
Iowa—**Brueck Constr. Co.**, Battle Creek, Iowa, LB **$74,304**, grading 6.531 mi. Iowa 140 from Sloan west to Hornick, F-1041 (2), Woodbury Co. CD 10/2.

▲ **SOUTH DAKOTA**—State Dpt. Hys., Pierre, Bids opened 10/9.
Massman Constr. Co., 3917 Broadway, Kansas City, Mo. CA **$1,093,854**, substructure for 5058 ft. 6 in. bridge over Missouri River at Mobridge, Proj. WAR 180 (1) Corson and Walworth Counties. CD 8/29.

▲ **NEBRASKA**—State Dpt. Rds. & Irrigation, L. N. Ress, state engr., Lincoln, Bids opened 10/17,
Neb.—**Capital Bridge Co.**, 1001 N. 9th St., Lincoln, Neb. LB **$760,992**, No. 01-09-Lincoln-Omaha Rd. near Millard, Sarpy and Douglas Counties; LB **$444,049**, No. 01-09-Lincoln-Omaha Rd. near Millard viaducts Sarpy and Douglas Counties; LB **$294,610**, No. 01-09 (20) Lincoln-Omaha Rd. near Millard bridges in Sarpy and Douglas Counties; LB **$124,710**, F-314-Adams-Sterling grading, detour etc., bridges Gage and Johnson Counties; LB **$93,773**, F-275-grading, gravel detour, bridges Madison Co.;
Neb.—**Blacktop Inc.**, Fremont, Neb. LB **$325,809**, F-58&261-Schuyler-Pilger, grading, detour, fence, gran. sub., soil aggreg., b. conc. Colfax Co.; LB **$247,836**, F-158, Emmet-O'Neil, grading, bran fill, sand shoulder b. conc., Holt Co.;
Neb.—**Fremont Contractors**, Fremont, Neb. LB **$229,938**, F-58&261-Schuyler-Pilger, grading, detour, culverts, 4 bridges, fence, granular, sub., soil aggreg., b. conc., Colfax Co.; LB **$132,802**, U-10-west 12th St. in North Platte, grading, paving, culverts, traffic control;
Neb.—**Booth & Olson**, 529 Ins. Exchange Bldg., Sioux City, Ia. LB **$225,330**, F-445, S-214, grading Springfield north, spur to Interstate Hy. south of Gretna, gravel, detour, paving guard, Sarpy Co.; LB **$168,354**, No. 01-09, Lincoln Omaha Rd. near Millard, culverts, Sarpy and Douglas Counties;
Neb.—**Dobson Bros. Constr. Co.**, 503 1st National Bank Bldg., Lincoln, Neb. LB **$165,045**, No. S-753, Plymouth-Beatrice, grading, detour, granular sub, soil, aggreg. b. conc., Jefferson and Gage Counties;
Neb.—**Western Contg. Corp.**, 400 Benson Bldg., Sioux City, Iowa. LB **$1,349,273**, No. 01-09, Lincoln-Omaha Rd. near Millard, grading, paving Sarpy and Douglas Counties;
Neb.—**W. A. Biba Eng. Co.**, Geneva, Neb. LB **$310,642** F-275, Newman Grove, grading, gravel, detour, guard, granular sub, soil aggreg., b. conc. Madison Co.;
Neb.—**Missouri Valley Constr. Co.**, Grand Island, Neb. LB **$169,070**, S-368, Arapahoe south, grading, detour, culvert, bridges guard, Furnas Co.;
Neb.—**Wallace Constr. Co.**, Wauneta, Neb. LB **$75,641**, S-553, Oshkosh-Chappell, grading, culverts, guard, soil aggreg., b. conc., Garden Co. CD 10/8.

▲ **KANSAS**—State Hy. Comn., State Office Bldg., Topeka, Bids opened 10/15,
Kan.—**Geo. Bennett Constr. Co.**, 3300 N. 91st, Bethel, Kan., LB **$940,201** (7 bidders) grading 9.414 mi. beginning Johnson-Miami Co. line approx. 2 mi. south of Edgerton; thence northeasterly on new location US-50, State Proj. No. 50-46 I 02-3(10) Pt 1, Johnson Co. CD 9/30;
Kan.—**Kaw Paving Co., Inc.**, 1st and Topeka, Topeka, Kan., LB **$173,394** (3 bidders), base and b. conc. 0.892 mi. beginning approx. 1 mi. north of Shawnee-Osage Co. line, State Proj. 75-89 F 063 3(7), Shawnee Co. CD 10/9.

▲ **TEXAS**—State Hy. Comn., Austin,
Tex.—**Dean Ward Co.**, P. O. Box 330, New Braunfels, Tex. CA **$1,475,276**, flex. base and asph. 4.677 mi. Hy. US 90, Proj. I 633 (11), Bexar Co.;
Tex.—**Texas Bitulithic Co.**, P. O. Box 10365, Dallas, Tex., CA **$3,187,168**. c. conc. 1.112 mi. Hy. US 77, Proj. 122 (18), Dallas Co.;
Tex.—**Stuckey Constr. Co., Luce Constr. Co., N. F. Bradley**, P. O. Box 1645, Wichita Falls, Tex., CA **$1,285,253**. c. conc. 3.485 mi. Hy. Loop 281-C 156-3-15, Wichita Co.;
Tex.—**Adams Bros.**, P.O. Box 310, Athens, Tex. CA **$514,857**, flex. base and one course surf. treat, b. conc. 11.711 mi. Hy. U.S. 69, Proj. F. 566 (8), Cherokee Co.;
Tex.—**Moormac's, Inc.**, P. O. Box 1509, Muskogee, Okla., CA **$762,226**, grading, structures and grade separations 5.666 mi. Hy. US 75, Proj. I. 569 (20) and F 569 (13) Ellis Co. Grand total $7,224,780 bids Oct. 10, awarded Oct. 15. CD 9/23.

▲† **Boyd Callan, Inc.**, P.O. Box 3146, Waco, Tex., LB **$1,263,700**, est. $1,695,060, Channel Improt. Unit 1,

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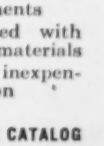

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San Antonio River, San Antonio Channel Improv., San Antonio River and tributaries, San Antonio, ENG-41-443-58-4, TEXAS. U. S. Eng., P.O. Box 1600, Fort Worth, Tex. Bids Oct. 22. CD 9/20.

† **Chaney & Hope,** Box 7271, Dallas, Tex., CA $725,400 Hydrant Fueling Sys. at Sheppard Air Force Base, ENG-34-066-57-64, WICHITA FALLS, TEX. U. S. Eng., Box 61, Tulsa, Okla. Bids Sept. 18, awarded Sept. 23. CD 9/26, under LB.

Knisely-Moore Co., Douglas, Wyo. LB Est. $900,000, constr. 15 mi. road to owner's steam power plant near Glenrock, Converse Co., WYOMING. Pacific Power & Light Co., Casper, Wyo.

Lock Joint Pipe Co., S.W. of Cheyenne, Wyo., CA $410,635, Approx. 40,600 lin. ft. 20x24 in. water supply line pipe and fittings, CHEYENNE, WYO. City, P. O. Box 257, Cheyenne, Wyo. Bids Sept. 25, awarded Oct. 14. CD 5/16/50.

▲ **COLORADO**—State Hy. Dpt., 4201 E. Arkansas St., Denver,
Cancelled bids to have been opened Oct. 18, grading and structures 6.411 mi. Colo. Proj. No. 1 003-1 (10), Adams Co. $1,139,000.

† **Reeder Constr. Co.,** 2128 Hawes St., Dallas, Tex., CA $728,648, Est. $869,557, channelization of Rio Grande, Sta. 1400-00 to 1908-00, Socorro area, Middle Rio Grande Project, Spec. DC-4951, NEW MEXICO, Bureau Reclamation, Dpt. Interior, Albuquerque, N. M. Bids Sept. 17, awarded Oct. 17. CD 9/30, under LB.

BUILDINGS—LB & CA

D'Arcy Leck Constr. Co., 2838 Stevens Ave., Minneapolis, Minn. LB $826,798 (9 bidders), general contract 156,700 sq. ft. steel frame SERVICE AND REPAIR FACILITY, incl. sewerage sys., etc. Aldrich Ave. between 94th and 96th Sts., BLOOMINGTON (P. O. MINNEAPOLIS), MINN. W. H. Ziegler Co., Inc., 2929 University Ave. S. E., Minneapolis, Minn. Bids Oct. 10. CD 9/27.

G. Madsen Constr. Co., 2823 Lyndale Ave. South, Minneapolis, Minn. CA $882,260, general contract three 1 story 12-classrooms ELEMENTARY SCHOOLS, at Excelsior, Groveland and Clear Springs, EXCELSIOR, MINN. Bd. Educ., Minnetonka School Dist. No. 7, W. T. Frommers, clk. Bids Oct. 8. CD 10/17, under LB.

M. J. McGough Co., 1954 University Ave., St. Paul, Minn., CA $400,000, 2 story, bsmnt., 150x70 ft., 14-classrooms SCHOOL addn., ST. PAUL, MINN. Sacred Heart Parish, 811 East 6th St., St. Paul, Minn. Ellerbe & Co., E. 505 First Natl. Bank Bldg., St. Paul, Minn., archts.

▲ **Universal Constr. Co.,** 1202 Southwest Blvd., Kansas City, Mo., LB $1,704,954, est. $1,000,000. (6 bidders) 6 story, rein.-con., brick, concrete block MOTEL, KANSAS CITY, MO. Prom Investment Co., c/o Abe Yeddis, 7500 E. 12 St., Kansas City, Mo. Bids Oct. 9. CD 10/1.

Bishop Constr. Co., 3314 Roanoke Rd., Kansas City, Mo., CA $733,000, renovating State Hospital No. 3, replace present windows with detention windows and screens, water proofing, all brick work in main bldg. and 2 wings, NEVADA, MO. Div. P. Bldgs., State Capitol Bldg., Jefferson City, Mo. Bids Sept. 11.

▲ **Vorhof-Duenke Real Estate Co.,** 7567 St. Charles Rock Rd., St. Louis 14, Mo., Owner Builds. $1,500,000. development of luxury-styled RESIDENTIAL area known as Westland Estates on 80-acre tract on Mason Rd., adjacent to new Bellerive Country Club, ST. LOUIS, MO.

King Constr. Co., Texarkana, Tex., LB $624,538, general constr.; mech. work, elec. work, kitchen equipment and laundry equipment for HOSPITAL addn., HELENA, ARK. Helena Hospital Assoc. and City of Helena, Helena, Ark. Bids Oct. 8. CD 9/5.

▲ **Natikin & Co.,** 6610 Supply Row, Houston, Tex. LB $1,058,000, POWER PLANT extension, Contr. No. 48, 49 and 50 AUSTIN, TEX. City, City Hall, Austin, Tex. Bids Oct. 15. CD 10/3.

▲ **T. C. Bateson Constr. Co.,** Box 35351, Airlawn Station, Dallas, Tex. LB Est. $4,500,000, 8 story HOSPITAL addn., DALLAS, TEX. Methodist Hospital of Dallas, 301 W. Colorado St., Dallas, Tex. CD 7/10.

▲ **United Engineers & Constructors, Inc.,** Broad and Arch Sts., Phila., Pa., and Box 118, River Rouge, Mich. CA $7,650,000, CHEMICAL PLANT, FREEPORT, TEX. E. J. Lavino & Co., c/o G. B. Gold, vice pres., 3 Penn Center Plaza, Phila., Pa. CD 10/18.

▲ **Tellepsen Constr. Co.,** 1710 Telephone Rd., Houston, Tex., CA $375,000, MOTEL, 13432 Hempstead Hy., CA $375,000, MOTEL, 9225 Eastex Hy., CA $375,000, MOTEL 11915 Hy. 75 North, HOUSTON, TEX. National Motels, Inc., c/o 10119 Humble Rd., Houston, Tex. Grand total $1,125,000. CD 6/26.

▲ **M. W. Kellog Co.,** 711-3rd Ave., New York, N. Y. CA $20,000,000, POLYETHYLENE PRODUCTION PLANT on Houston Ship Channel; CA $500,000 WAREHOUSING on Houston Ship Channel, HOUSTON, TEX. National Petro-Chemicals Corp. of New York, c/o Dr. Rob. E. Huse, vice-pres., 99 Park Ave., New York, N. Y. CD 10/17.

▲† **C. A. Logeman,** Box 2255, San Antonio, Tex., CA $1,309,482, altering bldgs. and utilities Veterans Administration HOSPITAL, McKINNEY, TEX. Veterans Admin., Munitions Bldg., Wash., D. C. Bids Oct. 8. CD 10/10, under LB.

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
November 7 Arizona

▲† **Oregon**—BA 12/4—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars Ashland, Schedule 1, Item 1: 1 main control board, designated C1A, for Green Springs Powerplant. Schedule 2, Item 2: 1 lot of equipment, consisting of; 1 controlled station supervisory control and telemetering equipment cubicule for Green Springs Powerplant; 1 carrier-current transmitter-receiver set for Green Springs Powerplant; 1 water-level telemeter transmitter complete with float and accessories for mounting in the Government's floatwell and shelter house at Keene Creek Reservoir; and 1 desk-type and 2 wall-type telephones and ringers for a 3-party circuit at Green Springs Powerplant and Keene Creek Reservoir-Terminals for Green Springs Powerplant, Rogue River Basin Proj., Inv. No. D-5-4985. CD 9/16.

BUILDINGS—BA

▲ **Calif., Long Beach**—LIBRARY ADDITION—BA 11/20—Calif. Div. Architecture, 1100 S. Grand Ave., Los Angeles, library addn. at Long Beach State College, about 74,600 sq. ft. total floor are in con. framed three story bldg., W.O. 3719GC-56, $1,029,000. Plans deposit $50. CD 4/24/56.

▲ **Calif., Redwood City**—HOSPITAL—BA 12/4—Sequoia Hospital Dist., c/o Bd. Directors, Whipple Ave. and Alameda De Las Pulgas, Redwood City, hospital addns. at Sequoia Hospital, $2,925,000. Stone, Mulloy, Marraccini & Patterson, 526 Mission St., San Francisco, archts. Washington & Mitchell, 204 Sacramento St., San Francisco,, engrs. CD 4/15.

▲ **Calif., Long Beach**—HOSPITAL—BA 12/11—City, City Hall, community hospital addns. $2,500,000. CD 5/15/56.

HEAVY CONSTRUCTION—LB & CA

▲† **Aero Test Equipment Co.,** 2615 W. Mockingbird Lane, Dallas 35, Tex., CA $1,369,630. altitude test chambers, IFB 42-600-57-292, HILL AIR FORCE BASE, UTAH. Headquarters, Ogden Air Material Area, U. S. Air Force, Hill Air Force Base, Utah. CD 9/1.

▲ **Vinson Constr. Co.,** Box 930, Phoenix, Ariz., LB $1,468,223, installing 6 mi. storm sewer in 7th St., PHOENIX, ARIZ. City, City Hall, Phoenix, Ariz. Yost & Gardner, Mayer-Heard Bldg., Phoenix, Ariz., engrs. CD 5/28;
Thompson Plumbing & Heating, 1008 N. 15 Ave., Phoenix, Ariz., LB $414,320, est. $418,969, sewer installation, 11-square block area (Phoenix, Ariz.).

WASHINGTON—State Hy. Comn., Olympia,
Wash.—**Strong & MacDonald, Inc.,** 4045 Ruston Way, Tacoma, Wash., LB $462,605, grading, rein.-con. box culverts 3.002 mi. Sec. State Hy. 13-A, North Cove to Cedar River, FAS S-0453 (5), Pacific Co.;
Wash.—**T. T. Burnham Co.,** 18666 Beverly Rd., Seattle, Wash., LB $239,462, grading, surf. cement-treated base, b. conc. paving, constr. rein.-con. slab bridge and installing illumination system on 0.26 mi. Primary State Hy. 9, Deschutes Parkway connection in Olympia, Thurston Co. Bids Oct. 22. CD 10/8.

▲†**Donald M. Drake Co.,** 1600 N.W. Savier St., Portland, Ore. LB $1,320,626, est. $1,488,009. earthwork, concrete lining and structures for Block 20, lateral Wahluke Branch Canal Laterals, Columbia Basin Project, DC-4963, WASHINGTON. Bureau Reclamation, Dpt. Interior, Ephrata, Wash. Bids Oct. 15. CD 10/8.

▲ **WASHINGTON**—State Hy. Comn., Olympia,
Grant Constr. Co., Coeur d'Alene, Idaho, CA $1,244,176, draining, grading surf., constr. cement treated base, b. conc. paving and installing 2 illumination sys. on 12,653 mi. Primary State Hy. 18, Murphy's Corner to Power line, FAP No. 1-002-4 (6), Grant Co. Bids Oct. 15, awarded Oct. 17. CD 10/18, under LB.
Argentieri & Colarossi, 1815 Jackson St., Seattle, Wash., CA $839,742, water mains in Nesbit Ave., etc. between N. 85 and 110 Sts., Greenwood to Corliss, SEATTLE, WASH. City, County-City Bldg., Seattle 4, Wash. Bids Oct. 9. CD 10/17, under LB.

▲ **Lee Hoffman Constr. Co.,** 415 NW Cedar, Beaverton, Ore., CA $1,335,000, waste supply projects for Oregon City and West Linn OREGON. South Fork Water Bd. City Hall, Oregon City, Ore. Bids Sept. 18. CD 8/16.

▲ **CALIFORNIA**—State Div. Hys., 120 S. Spring St., Los Angeles,
Matich, Sundt & Bevanda, P.O. Box 390, Colton, Calif. LB $2,328,523, Est. 7,000,000. (15 bidders) grading, surf., 8.6 mi. 4-lane divided freeway on new alignment on U.-S. 395/66 between 27 St. in San Bernardino and Devore, incl. 6 major structures, San Diego Co. Bids Oct. 17. CD 9/18.

▲ **Ukropina-Polich-Kral & Vinnell Co., Inc.,** 1145 Westminister Ave., Alhambra, Calif. (joint venture). LB $2,483,808 (6 bidders) Storm Drain Bond Issue Proj. 16. Cerritos-Maplewood Storm Drain, LOS ANGELES, CALIF. Los Angeles Co. Flood Control Dist., 12250 Alcazar St., Los Angeles, Calif. Bids Oct. 18. CD 9/23.

▲ **Guy F. Atkinson Co.,** 10 W. Orange Ave., South San Francisco, Calif., **Arundel Corp.,** Pier 2, Pratt St., Baltimore, Md. and **L. E. Dixon,** 409 S. California St., San Gabriel, Calif., CA $8,136,420. 29,200 lin. ft. 12 in. diam. tunnel connecting Cherry Dam with penstocks at Cherry Power House, 5,850 ft. 81x11 ft. tunnel to divert runoff from Lake Eleanor watershed into Cherry Reservoir, Hetch Hetchy Dam, SAN FRANCISCO, CALIF. City and San Francisco Co. P. Utilities Comn., City Hall, San Francisco, Calif. Bids Oct. 3, awarded Oct. 17. CD 10/8, under LB.

BUILDINGS—LB & CA

C. H. Elle Constr. Co., 390 Yellowstone Ave., Pocatello, Idaho, LB $883,795 (5 bidders), 2 story, 66,000 sq. ft. masonry STUDENT UNION BLDG. at Idaho State College, POCATELLO, IDAHO. State Comr. P. Wks., 432 Capitol Bldg., Boise, Idaho. Bids Oct. 17. CD 10/7.

▲† **Larsen Constr. & Eng. Co.,** 2667 Lincoln Ave., Ogden, Utah. LB $1,396,227 (12 bidders) GENERAL PURPOSE BUILDING, CONTROLS LABORATORY, systems acceptance facility at Marquardt Jet Laboratory, Spec. MJJ 500-3, for Dpt. Air Force, OGDEN, UTAH. Marquardt Aircraft Co., 7735 Kester St., Van Nuys, Calif. Bids Oct. 10. CD 9/23.

P. A. Cook, Inc., 307 Crescent Dr., Yakima, Wash., CA Est. $500,000. 50-unit MOTEL with swimming pool, N. 1 St. in 1200 block, YAKIMA, WASH. Holliday Motels, Inc., Yakima, Wash.

▲ **The Del Webb Constr. Co.,** P. O. Box 4066, Phoenix, Ariz., CA $13,000,000, 500 unit GARDEN MOTOR HOTEL on 38 acre site, SAN LEANDRO, CALIF. Owner, c/o contractor. Flamingo Hotel, lessee. Constr. in 1958.

▲ **M. & K. Corp.,** 519 California St., San Francisco, Calif. CA $2,937,000. general contract 3 story, all concrete HOSPITAL addns. Agnew State Hospital, AGNEW, CALIF. State Div. Architecture, 1120 N St., Sacramento, Calif. Bids Sept. 24, awarded Oct. 16. CD 9/26;
W. L. Hickey Sons, Inc., 901 El Camino Real, Lomita Park, Calif. CA $590,967. heating and ventilating work for hospital addns. (Agnew, Calif.). CD 10/2, under LB.

Associated Constr. & Eng. Co., 2903 Geneva Ave., San Francisco, Calif., LB $972,800 (7 bidders) addnl. stores at shopping center, incl. 12 arcade shops and off-street parking, CORTE MADERA, CALIF. Madera Gardens Development Co., c/o Frank Rusalem, pres., 1000 Sutter St., San Francisco, Calif.- John S. Bolles, Pier 5, San Francisco, Calif. CD 11/1/56.

▲ **Steed Bros.,** P. O. Box 350, Alhambra, Calif., LB $1,592,900 (11 bidders) Stevenson JUNIOR HIGH SCHOOL, LOS ANGELES, CALIF. Los Angeles Bd. Educ., 1425 S. San Pedro St., Los Angeles,. Calif. Bids Oct. 15. CD 9/23.

▲† **Robert E. McKee, General Contractor, Inc.,** 4700 San Fernando Rd. West, Los Angeles 39, Calif. LB $19,877,500 (5 bidders) VETERANS HOSPITAL BLDGS. and facilities, 90 acre site, Spec. 5730, PALO ALTO, CALIF. Veterans Admin., Office of Direct. Constr., Munitions Bldg., Wash., D. C. Bids Oct. 22. CD 8/8.

▲ **Fluor Corp.,** 2500 Atlantic Blvd., Los Angeles 22, Calif. CA Est. $9,000,000. design and construct, second unit 60,000 kw reheat turbo generator units at Coldwater STEAM PLANT, near SAN BERNARDINO, CALIF. California Electric Power Co., 3771 W. 8 St., Riverside, Calif. CD 11/15/56.

▲ **I. C. Curry, Inc.,** 1701 "B" St., San Diego, Calif. LB $1,949,870, est. $3,000,000 (3 bidders) Madison SENIOR HIGH SCHOOL, SAN DIEGO CALIF. San Diego Unified School Dist. 825 Union Ave., San Diego, Calif. Bids Oct. 10. CD 11/9.

▲ **General Atomic Div., General Dynamics,** 3165 Pacific Hy., San Diego, Calif., CA NUCLEAR REACTOR to produce radioisotopes and for training and research at John Jay Hopkins Laboratory, SAN DIEGO, CALIF. General Dynamics Corp., Convair Div., 3165 Pacific Hy., San Diego, Calif. CD 5/4/56.

▲ **Wm. McIntosh & Son,** 635 Texas St., San Francisco, Calif. LB $469,898 (A) LB $1,039,064 (B) (6 bidders), Tuberculosis HOSPITAL BLDG. modernization, Job 1521, SAN FRANCISCO, CALIF. City and San Francisco Co., Director P. Wks., City Hall, San Francisco, Calif. CD 11/5/54.

▲ **Nylin Hurd Constr. Co.,** 1317 Santiago Ave., Santa Ana, Calif. LB $1,686,104. (13 bidders), FINANCE BLDG. in Civic Center, SANTA ANA, CALIF. Orange Co. Bd. Supervs., Court House, Santa Ana, Calif. Bids Oct. 16. CD 8/13/56.

Spears Constr. Co., P. O. Box 1124, Modesto, Calif. LB $927,000 (10 bidders) MAXIMUM SECURITY JAIL, French Camp, STOCKTON, CALIF. San Joaquin Co., c/o Clerk, Courthouse, Stockton, Calif. Bids Oct. 14. CD 9/19.

▲ **Kemp Brothers,** 8750 Mettler St., Los Angeles, Calif. LB $1,294,000. (6 bidders) Sierra HIGH SCHOOL addns., WHITTIER, CALIF. Whittier High School Dist., 12100 E. Washington Blvd., Whittier, Calif. Bids Oct. 16. CD 10/24/55.

CANADA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
November 6, 20 Ontario

BUILDINGS—BA

Ont., Toronto—HOUSING—BA 11/15—Toronto Housing Auth., City Hall, 8 story, bsmnt., 109 bachelor and

(Continued on page 76)

Everybody benefits with flexible, durable Wheeling Corrugated Metal Pipe

The highway designer . . . the engineer . . . the public

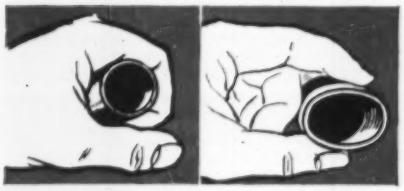
Designers specify versatile Wheeling Corrugated Metal Pipe because they know its flexibility will absorb shock and extreme vibration . . . that it won't crack or spall . . . that it holds up under light or heavy fill. And its *durability* means long, trouble-free service.

Highway engineers like the way the longer sections of Wheeling Metal Culvert Pipe can be installed with ordinary labor. Low cost of transportation, too, because of its nestability and light weight.

The public endorses Wheeling Culverts because they offer the lowest cost-per-year of any type culvert available. This means lower taxes, better, longer-lasting roads.

Wheeling Corrugated Metal Culvert Pipe, or Pipe Arch are available in Copper Steel or Copper-Bearing Pure Iron, plain galvanized or bituminous coated (with or without paved invert), in a wide range of gauges and diameters. For details contact the Wheeling Corrugating Company warehouse, Culvert Shop, or sales office nearest you.

WHEELING CORRUGATING COMPANY • WHEELING, WEST VIRGINIA
IT'S WHEELING STEEL



SIMPLE TEST OF FLEXIBILITY. *Squeeze a piece of garden hose with the entire hand. It "gives" uniformly around its circumference. (Flexible Pipe.) Now place it between the thumb and forefinger. Notice how easily it "gives" at both top and bottom. (Rigid Pipe.)*

Wheeling warehouses, sales offices or culvert plants are in Atlanta, Boston, Buffalo, Chicago, Columbus, Des Moines, Detroit, Houston, Kansas City, Louisville, Madison, Martins Ferry, Minneapolis, New Orleans, New York, Peoria, Philadelphia, Richmond, St. Louis.

(Continued from page 74)

1-bedroom suites, rein.-con., brick walls in an area 42x227 ft., Regent Park North Housing Annex, Old Oak St. $924,200. Plans deposit $50. J. E. Hoare, Jr., 481 Eglinton Ave. W., archt. Wallace, Carruthers & Assocs. Ltd., 92 Yorkville Ave., engrs. CD 8/4/56.

▲ **B. C., Vancouver**—SCHOOL—BA 11/26—Vancouver School Bd., 1595 W. 10th Ave., Sir Charles Tupper Secondary School, 23rd and Pr. Edward Ave. $2,000,000. E. D. King, 1595 W. 10th Ave., archt. CD 4/18.

HEAVY CONSTRUCTION—LB & CA

▲ **ONTARIO**—Dpt. Hys., Parliament Bldgs., Toronto, Bids opened 10/15,

Ont.—**Curran & Briggs Ltd.**, 61 Haverson Blvd., Toronto, Ont. LB **$464,927**. (6 bidders), Contr. 57-151, grading, culverts and gran. base 6.1 mi. Trans-Canada Hy. 17 from 6.1 mi. east to 12.2 mi. east of Manitoba, Kenora. CD 9/25;

Ont.—**Dibbles Constr. Co. Ltd.**, 384 Bank St., Ottawa, Ont. LB **$1,039,247**. (14 bidders), Contr. No. 57-159, grading culverts, gran. base 8.5 mi. Trans-Canada Hy. 69, from 1.5 mi. south of Shawanaga River northerly to 1.5 mi. north of Pointe Au Baril. CD 9/25;

Ont.—**King Paving Co. Ltd.**, P.O. Box 410, Oakville, Ont. LB **$365,763**. (8 bidders), Contr. No. 57-158, gran. base and hot mix paving 2.75 mi. Queen Elizabeth Way from Hy. No. 25 to Freeman Interchange, Freeman;

Ont.—**Curran & Briggs Ltd.**, 61 Haverson Rd., Toronto, Ont. LB **$204,236**. (8 bidders), Imprv. 4.1 mi. district roads, Milliken Rd. Diversion and Secondary Road, No. 612, Sault Ste. Marie;

Ont.—**Sir Lindsay Parkinson Canada Ltd.**, 659 Yonge St., Toronto, Ont. LB **$221,296** (7 bidders) Contr. No. 57-130, grading, gran. base and hot mix paving structure, 0.6 mi. Hy. 17 (Trans-Canada) Aux Sauble River Bridge at Massey.

▲ **ONTARIO**—Dpt. Hys., Parliament Bldgs., Toronto, **Dibbles Constr. Co., Ltd.**, 384 Bank St., Ottawa, Ont., CA **$1,039,247** (14 bidders) Contr. No. 57-159, grading, culverts and gran. base Trans-Canada Hy. No. 69, from 1.5 mi. south of Shawanaga River northerly to 1.5 mi. north of POINTE AU BARIL, ONT. Bids Oct. 16, awarded Oct. 18. CD 9/30.

▲ **Foundation Co. of Canada Ltd.**, 1900 Sherbrooke St. W., Montreal, Que., LB **$8,508,790** (3 bidders) superstructure, air terminal bldg. at Montreal Airport, DORVAL, QUE. Dpt. Transport, Hunter Bldg., Ottawa, Ont. Bids Oct. 10. CD 8/29.

▲ **Omega Constr. Co. Ltd.**, 6555 Cote des Neiges Rd., Montreal, Que., CA **$3,943,210**, bathhouse, pool and gymnasium, Sports Center, Maisonneuve Park, MONTREAL, QUE. City of Montreal, City Hall, Montreal, Que. Bids Sept. 18, awarded Oct. 10. CD 10/3.

BUILDINGS—LB & CA

▲ **Dell Constr. Co. Ltd.**, 2461 Bloor St. W., Toronto, Ont., CA **$3,093,664**, Tender No. 2, Lawrence Heights low rental HOUSING, 20 semi-detached houses and 229 row-houses in 35 blocks Lawrence Ave. W. area, TORONTO, ONT. Ontario Dpt. Planning & Development, Queen's Park, Municipality of Metropolitan Toronto, 67 Adelaide St. E., both Toronto, and Central Mortgage & Housing Corp., 56 Lyon St., Ottawa, Ont. Bids Aug. 20. CD 9/20, under LB.

▲ **Varamae Constr. Co. Ltd.**, 532 St. Clair Ave. E., Toronto, Ont., LB **$1,298,000** (17 bidders) 4 story rein.-con. HOME FOR THE AGED, Kipling Ave., TORONTO, ONT. Municipality of Metropolitan Toronto, 67 Adelaide St., Toronto, Ont. Bids Oct. 3. CD 9/19.

Ed. Brunet & Sons Ltd., 9 rue Dumas, Hull, Que., CA About **$800,000** (2 bidders) 4 story, bsmnt. 150x170 ft., rein.-conc., brick, 10 classrooms plus physics and chemistry labs, CLASSICAL COLLEGE, concrete fdn., HULL, QUE. Archevache du Diocese d'Ottawa, Ont., Ottawa, Ont. Bids Sept. 30. CD 1/24.

LATIN AMERICA

HEAVY CONSTRUCTION—BA

▲ **Argentina**—BA 12/12—Dpt. Tecnico de la Municipalidad, Neququen, Provincia de Neuquen, Argentina, 120 blocks of street paving, $1,000,000

AMERICANS ABROAD

HEAVY CONSTRUCTION—LB & CA

▲ **Morrison-Knudsen Co.**, 319 Broadway, Boise, Idaho, U. S. A., CA Total est. **$45,000,000**. water supply for Teheran, power house and transmission line, 100 ft. high regulating reservoir, Karadja River Development Project, IRAN. Govt. of Iran, Teheran, Iran Harza Eng. Co., 20 N. Wacker Dr., Chicago, Ill., U. S. A., engrs. CD 11/29

PROPOSED PROJECTS

WATER SUPPLY

▲ **Ky., Louisville**—Louisville Water Co., S. Third St., misc. distr. mains and services and meters, **$800,000**; 60 in water main from Bardstown Rd. to Preston Hy., **$1,000,000**. Constr first part 1958. B. E. Payne, c/o owner, engr.

SEWERS, WASTE DISPOSAL

▲ **Calif., Beverly Hills**—Dpt. P. Wks., Beverly Hills, sanitary sewers **$1,750,000**, storm drainage sys. **$4,250,000**.

BRIDGES

▲ **Ill., Aurora**—Aurora Twp., Montgomery Rd., Indiana Trail Road bridge over Fox River, near here, **$984,324**. Vogt Ivers Seeman & Assocs., 20 N. Wacker Dr., Chicago, consult. engrs.; Rathbone Avenue bridge, **$200,000**, Walter E. Deuchler & Co., 63 S. LaSalle St., consult. engrs.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 North Office Bldg., Harrisburg,

Delaware Co.—0.05 mi. Crum Creek Bridge, **$450,000**.

Perry and Dauphin Counties—0.35 mi. Juniata River Bridge. **$1,873,000**. CD 7/18/51.

▲ **ONTARIO**—Dpt. Hys., Parliament Bldg., Toronto,

Fort Frances—Rainy Lake Causeway, across Rainy Lake, extending Hy. No. 120, to Fort Frances on Rainy River, about 3½ mi. in length, 90 mi. road will be built to link causeway with Atikokan. **$5,000,000**. Foundation of Canada Eng. Corp. Ltd., 200 Bloor St. E., Toronto, consult. engrs.

STREETS AND ROADS

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

Wilmington—hy. work, relocation Rte. 125, approx. 3 mi., **$4,600,000**. Bids late in December 1957.

Chapter 90 hy. wk., **$85,000**, Constr. 1958.

Winchester—Chapter 90, hy. work, **$76,000**, Constr. 1957.

Woburn—Chapter 90, hy. work, **$110,000**. Bids probably in February 1958.

▲ **O., Dayton**—City, City Hall, exten. Stanley Ave. from Valley Pike to Webster St. **$1,650,000**. CD 8/3/45.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 North Office Bldg., Harrisburg,

Allegheny Co.—wid'n. existing pavement to 48 ft. with 10 in. C.A.B.C. "A" and surf. with b. conc. 12.48 mi. Etna to Butler Co. **$2,530,000**.

52 ft.-ID-2 surfacing on 9 in. crushed aggreg. base and 10 c. conc. 6.37 mi. West Elizabeth-Pleasant Hills. **$2,000,000**. CD 12/21.

Armstrong Co.—4-12 ft. lanes with 4 ft. concrete division, 9 in. c. conc 2.97 mi. Worthington By-Pass. **$2,030,000**.

Bedford Co.—2-12 ft. lanes, 9 in. uniform c.-conc. 5.46 mi. Everett-Breezewood. **$2,400,000**.

Bucks Co.—4-12 ft. lanes divided 10 in. c.-conc. 2.98 mi. North Side Rte. 13 to South Side Woodhaven Rd. **$5,500,000**. FAI. CD 2/21.

Butler Co.—4-12 ft. lanes with 4 ft. conc. divisor, 9 in. c.-conc. 6.82 mi. Butler By-Pass East, Butler By-Pass West. **$2,300,000**.

Cambria Co.—4-12 ft. lanes of 9 in. c.-conc. pavt. with 20 ft. median 9.5 mi. Mundy's Corner east of Ebensburg. **$3,900,000**. CD 12/21.

Chester Co.—48 ft. ID-2 bit. surf. course on plain c. conc. base course 4.88 mi. Painters Crossroads to West Chester Boro. **$1,700,000**.

Clearfield Co.—24 ft. ID-2 bit. surf. crossing on 10 in. crossing aggreg. base crossing 36 ft. ID- 2 bit. surf. crossing on existing and widened (10 in. crossing aggreg. base, A) pavement 1.79 mi. Pleasant Hill to Hawk Run. **360,000**.

Dauphin Co.—4-lane divided 10 in. c.-conc. 0.67 mi. Harrisburg Expressway. **$6,200,000**. FAI Proj.

Delaware Co.—4-12 ft. lanes divided 10 in. c.-conc 4.36 mi. Media By-Pass. **$5,700,000**. CD 1/4/54

Delaware and Chester Counties—48 ft. ID-2 bit. surf. course on 9 in. c. conc. base course 2.93 mi. Delaware State line to West Chester. **$1,100,000**. CD 1/4/54.

48 ft. of ID-2 bit. surf. crossing on P1 cem. con. conc base crossing 4.88 mi. Painters Crossroads to West Chester Boro. **$1,700,000**.

Franklin Co.—24 ft. ID-2 bit. surface course on 10 in. crushed aggreg. base course 9.72 mi. Mercersburg-Green Castle. **$600,000**.

Lackawanna Co.—4-lane divided 10 in. c. conc 7.5 mi. Clark Summit-Jordan Hollow, FAI Proj. **$5,500,000**. CD 3/5/56.

Lackawanna and Susquehanna Counties—4 lane divided 10 in. c.-conc. 11 mi. Jordan Hollow-Lenox, FAI Proj. **$7,000,000**.

Lycoming Co.—24 ft. ID-2 bit. surf. on 9 in. crushed aggreg. base 1.34 mi. Muncy Creek Twp. **$2,125,000**. CD 6/3.

McKean Co.—wid'n. 22 ft.-33 ft. of ID-2 bit. surf. on 8 in. crushed aggreg. base course 6.59 mi. Mount Jewett Boro to Kassen. **$854,000**.

Monroe Co.—4 lane divided 10 in. c.-conc. 3.2 mi. Stroudsburg By-Pass, FAI Proj. **$4,000,000**.

4 lane divided 10 in. c.-conc. 2.8 mi. Stroudsburg By-Pass, FAI Proj. **$6,000,000**.

ID-2 on 9 in. crushed aggreg. base (new constr.) ID-2 on 7 in. crushed aggreg. base and 12 in. widen (overlay) 22 ft.-54 ft. of 9 in. c. conc. pavement 3.64 mi. east of Pocono Lake to Mount Pocono. **$1,225,000**. CD 6/3.

Perry and Dauphin Counties—48 ft.-10 in. c. conc. pavement (4 ft. and 36 median) 5.25 mi. Duncannon By-pass, **$5,800,000**.

Somerset Co.—20 ft.-ID-2 surf. on 10 in. crushed aggreg. base (widening and new constr.) 4.04 mi. north of Kingwood to New Centerville, **$275,000**.

Susquehanna Co.—4-lane divided 10 in. c. conc. 11 mi. Lenox to New Milford, FAI Proj., **$8,000,000**.

4 lane divided 10 in. conc. 10.0 mi. New Milford-N. Y. line, **$7,500,000**.

Tioga Co.—(102-15)-22 ft. bit. surf. course on 12 in. crushed aggreg. base course 8.98 mi. Potter Co. line to Wellsboro Junction, **$870,000**.

Washington and Westmoreland Counties—4 lane divided (10 in. c. conc., 12 in. B. S. T. M. 15.85 mi. Bentleyville to T. R. 51, **$4,750,000**. FAI Proj.

Westmoreland Co.—4-11 ft. lanes with 4 ft. concrete divisor 9 in. c. conc. 4.48 mi. New Salem to Rte. 6404, **$1,400,000**.

48 ft.-9 in. c. conc. pavt. with 4 ft. concrete divisor 4.43 mi. Greensburg By-Pass, **$5,050,000**.

Widen existing 18 ft. and 20 ft. pavt. 9 in c. conc. pavt. to 4-11 in. lanes divided 4.01 mi. Beatty-Kingston, **$400,000**. CD 3/5/56.

EARTHWORK, WATERWAYS

▲† **Calif., Turlock**—Turlock Irrigation Dist., 117 W. Main St., 540 ft. dam, 2 million acre ft. reservoir, power plant on Toulume River, 2 mi. down stream from existing Don Pedro Dam. **$100,000,000**.

▲† **Kansas**—U. S. Eng., 1800 Federal Office Bldg., 911 Walnut, Kansas City 6, Mo., complete Iron Ave. cut-off downstream channels and part Smoky Hill Levees Salina, **$1,200,000**. Bids probably in December.

▲† **Alaska**—U. S. Eng., Anchorage, Alaska, dredging Dry Pass Channel. **$1,000,000**. Bids in March.

▲ **B. C., Vancouver**—Wenner-Gren British Columbia Development Co., c/o Government of British Columbia, Vancouver, 3,000,000 kw. hydro-electric power plant on Peace River in Rocky Mountain Trench area. **$400,000,000-$600,000,000**.

AIRPORTS

▲ **Calif., Fresno**—AIR TERMINAL, etc.—City, c/o Clerk, 2316 Fresno St., plans by Allen Y. Lew, A.I.A., Harry M. Nakata, designer in charge, Fulton-Fresno Bldg., Fresno, Fresno Air Terminal, 42,000 sq. ft. with restaurant, bar, air line offices, concession areas, **$1,000,000**; 600 ft. concourse, with small waiting area, **$160,000**; 6 story tower with control air safety, Weather Bureau, etc., separate bldgs. for fire station, service bldg., **$500,000**; landscape, roadways, ramp area, parking lot, etc. **$500,000**. Edward Lowe, electrical engr., and Wilson & Wilson, structural engrs., 2025 Tulare St. Leigh Fisher & Assocs., 2225½ Riverside Dr., South Bend, Ind., airport planning consult. CD 8/26.

▲ **Mich., Detroit**—TAXIWAYS, etc.—Bd. Supervs. Wayne Co., City-County Bldg., addnl. taxiways, **$920,000**; sewage disposal plant, **$250,000**, Detroit-Wayne Major Airport. Joseph W. Gross, c/o owner, engr. Constr. 1958. CD 11/9.

▲† **Man., Fort Churchill**—RUNWAY EXTENSIONS—Dpt. Air Force, The Pentagon, Wash. 25, D. C., U. S. A., runway extensions at air field. **$5,000,000**.

▲† **North West Territories, Frobisher Bay**—RUNWAY EXTEN.—Dpt. Air Force, The Pentagon, Wash., D. C., U. S. A., runway extens. at airfield. **$15,000,000**.

▲ **N. S., Halifax**—TERMINAL BLDG.—Dpt. Transport, Hunter Bldg., Ottawa, Ont., terminal bldg., at new International Airport. **$2,000,000**. Bids soon.

▲ **Ont., Sault Ste Marie**—AIRPORT—Dpt. of Transport, Hunter Bldg., Ottawa, airport at Point des Chenes, near here. **$3,000,000**.

LATIN AMERICA

▲ **Mexico, El Novillo**—Federal Electricity Comn., Mexico City, plans hydroelectric dam. **$7,200,000**. Ing. Ruben Delgado, c/o owner, engr.

PUBLIC BUILDINGS

▲ **Calif., El Sobrante**—SCHOOL—Sheldon Elementary School Dist., 1021 May Rd., school, **$1,198,000**. CD 11/23/55.

▲ **Calif., San Leandro**—LIBRARY—City, c/o Clerk, City Hall, voted bonds Oct. 8, library-community center, **$1,750,000** Francis J. McCarthy, 693 Mission St., San Francisco, archt. CD 11/30. Constr. in 8 months.

▲ **Colo., Aurora**—SCHOOLS—School Dist. No. 28-J, 11th and Peoria Sts., plans by Atchison & Kloverstrom, consult. engrs.-archts., 257 Josephine, Denver, 2 elementary schools, **$1,112,000**. CD 10/14.

▲ **Conn., Mansfield**—DORMITORY—State P. Wks. Dpt., 165 Capitol Ave., Hartford, dormitory for inmates **$1,000,000**; dormitory for inmates, **$1,000,000**. State Training School. CD 2/7/49.

▲ **Del., Seaford**—SCHOOL—Seaford Del. Special School Dist., plans by E. William Martin, 830 West St., Wilmington, 20 room elementary school. **$1,202,000**.

▲ **Fla., Sarasota**—HOSPITAL—County Hospital Bd., Gen Arnold Funk, chn. Bldg. Comn. and Mrs. Lota Mundy, chn. Bd., Sarasota, plans by Kannenberg & Hanneburth, 1422 Second St., 2 sections, 5 story, 44x307 ft. and 50x80 ft. memorial hospital addns. **$1,000,000**.

▲ **Ill., Park Ridge**—SCHOOL—School Dist. 207, Dempster St. and Potter Rd., bond election Nov. 23, 2 story, brick West Main High School, Oakton, Wolf Rd. and Howard Ave. **$6,520,000**, Childs & Smith, 20 Wacker Dr., Chicago, archts.

▲ **Iowa, Sioux City**—SYMPHONY HALL, etc.—City, City Hall, plans by William Beuttler, 522 14 St., symphony hall and cultural center, **$5,000,000**.

▲† **Minn., Fort Snelling**—LABORATORY—U. S. Govt., Bureau Mines, 1006 West Lake St., Minneapolis, plans by Bettenburg, Townsend, Stolte & Comb, 1437 Marshall Ave., St. Paul, research laboratory, east of Hy. 55 and 58th St. **$1,300,000**. (Govt. appropriated $100,000 for planning only). Constr. probably 1958.

▲ **Minn., Hopkins**—SCHOOL—Bd. Educ., R. B. Child, clk., **$1,850,000** bond election Nov. 12, Junior-High School on site N. of Cedar Lake Rd. between County Roads 73 and 18 to serve 1,200 pupils. Bissell &

Belair, 1111 Nicollett Ave., Minneapolis, archts. CD 3/5.

▲ **Neb., Fremont**—SCHOOL—Bd. Educ., Fremont, plans by Davis & Wilson, 225 Stuart Bldg., Lincoln high school. $1,900,000. CD 4/10.

▲ **Neb., Kearney**—SCHOOL—Bd. Educ., Kearney, $2,080,000 bond election Nov. 5, school constr. CD 5/21/56.

▲ **Neb., Scottsbluff**—SCHOOL—Bd. Educ., Scottsbluff, $2,500,000. bond election Nov. 26, school. CD 3/20.

▲ **O., Kent**—MUSIC-SPEECH CENTER—State Dpt. P. Wks., State Dpt. Bldg., Columbus, O., plans by Mellenbrook, Foley & Scott, 20 Beach St., Berea, music-speech center for Kent State University. $3,500,000. Bids in January.

Pa., **Bristol**—SCHOOL—Bristol Twp. School Dist. plans by Joseph F. Wigmore, 117 S. 17th St., Phila., Senior High School, Levittown. $1,000,000. CD 2/26.

▲ **Tenn., Knoxville**—AUDITORIUM, etc.—City, City Hall, bond referendum Nov. 21, auditorium-civic center. $3,000,000.

▲ **Tex., Brownwood**—SCHOOL—Brownwood Independent School Dist., plans by Hedrick, Stanley & Morey, archts.-consult. engrs., 1200 T&P Pass. Station Bldg., Fort Worth, high school. $1,600,000.

▲ **Tex., Bryan**—HOUSING—City Housing Auth., Bryan, plans by Wm. Nash, Box 41, 110 unit 95,000 sq. ft. housing $1,250,000. Carter & Burgess, 1100 Macon St., Fort Worth, and J. W. Hall, 601 E. 26th St., Bryan, and Fred Benson, 400 North Ave., Bryan, consult. engrs. CD 9/19/56.

▲ **Tex., San Antonio**—SCHOOL—Alamo Hgts. Independent School Dist. 150 E. Fair Oaks, Junior-Senior High School unit, $1,000,000. CD 11/9/55.

▲ **Wash., Mountlake Terrace**—SCHOOL—School Dist. 15, Edmonds, voted bonds Oct. 1 high school, $2,000,000; convert elementary school to Junior High School, $500,000. R. H. Burkhard, 2120 S.W. 152 St., Seattle, archt. CD 9/16.

▲ **Wash., Tacoma**—SCHOOL—Clover Park School Dist. 400, 5214 Steilacoom Blvd., Junior High School, $1,139,086. CD 12/6.

▲ **Wis., Oconomowoc**—SCHOOL—Bd. Educ. plans by Ebling, Plunkett & Keymar, 1220 Milwaukee St., Milwaukee, Zone 3, Greenland Elementary School; Park Lawn Elementary School addn.; high school addn. $1,000,000.

▲ **Ont., Toronto**—HOUSING—Metro Toronto Housing Co. Ltd., 203 Sackville St., plans by Jackson, Ypes & Assocs., archts. and engrs., 5385 Younge St., project for senior citizens, two 3 story bldgs. and 1 8 story bldg. Queen St. W. and Lansdowne Ave. $2,000,000. CD 1/28/56.

COMMERCIAL BUILDINGS

▲ **Ariz., Scottsdale**—HOUSING—Hallcraft Homes, 3701 E. Ind. School Rd., Phoenix, 600 homes housing $7,000,000.

▲ **Calif., San Diego**—MISSION VALLEY CENTER—May Department Stores Co., Morton D. May, pres., Railway Exchange Bldg., 611 Olive St., St. Louis, Mo., development of Mission Valley Center, incl. 300,000 sq. ft. May Co. Store, one or more other dpt. stores, a supermarket, restaurants and parking area for 7500 cars on 80 acre site at intersection of Main North South and East-west Freeways, etc., Total cost $18,000,000.

▲ **Conn., Hartford**—COMMERCIAL—East Side Business Development Corp., 983 Main St., bldg. for five business outlets, restaurant, off street parking, Talcott St. First structure proposed for Front-Market St. redevelopment area, 34,725 sq. ft. $1,000,000.

▲ **Ill., Palatine**—SHOPPING CENTER, etc.—Winston Park Northwest Corp., 1011 Lake St., Oak Park, homes, shopping center and industry, on 755 acres, "Winston Park Northwest" community, E. of Palatine downtown area, bounded by Wilke Rd. on E. and Palatine Rd. on S., $45,000,000; plans by Erwin Gerber, 1130 Raymound Bldg., Newark, N. J., 102 unit Northwest Plaza Shopping Center, with parking area Northwest Hy. and Baldwin Rd. $16,000,000.

▲ **Kan., Kansas City**—STORE—Harry Grossman, c/o Ralph Falwell, Jr., Elswood, Smith & Carlson, archts. 6110 Johnson Dr., Kansas City, Kan. 2 story, 45,000 sq. ft. floor area, granite trim, steel and masonry, air conditioned retail store, $1,000,000.

▲ **Mich., Lansing**—OSTEOPATHIC HOSPITAL—McLaughlin Hospital, Bd. Trustees plans by Clark R. Ackley, 1811 E. Michigan Ave., McLaughlin Osteopathic Hospital. $1,158,000. CD 3/24/54.

▲ **Minn., Collegeville**—DORMITORY—St. John's University, Collegeville, plans by Marcel Breuer, 201 E. 57 St., New York, N. Y. 4 story L-shape dormitory. $1,636,000. Federal loan approved. Constr. next Spring.

▲ **Minn., Minneapolis**—MOTOR INN, etc.—M. J. Troup, "The White House", 4900 Olson Memorial Hy., plans by A. Svensson, c/o Sebco, Inc., 127 Bryant Ave., North Minneapolis, 116 unit motor inn; incorporate and remodel existing restaurant, constr. two story wings, swimming pool, etc. $1,000,000. Constr. this fall.

▲ **N. J., Jersey City**—HOSPITAL—Hebrew Home for Orphans & Aged of Hudson & Bergen Counties, 198 Stevens Ave., plans by Katz, Waisman, Blumenkranz, Stein & Weber, 551 5th Ave., New York 17, N. Y., 3 story, 100 bed hospital, Fowler and Stevens Aves. $1,000,000. CD 10/3/56.

▲ **N. J., Vineland**—HOSPITAL—Newcomb Hospital, Vineland, plans by Helge Westermann, 113 W. 57 St., New York, N. Y., hospital wing. $1,500,000. J. A. Fletcher, Vineland, assoc. archt. CD 8/8.

▲ **N. Y., Greenburgh**—OFFICE EXCHANGE—New York Telephone Co., 140 West St., New York, Zone 7, plans by Perkins & Will, 55 Church St., White Plains, 3 story, bsmnt., office exchange bldg., County Center Rd. $1,500,000. CD 10/22/56.

▲ **N. Y., New York**—HOSPITAL—Roosevelt Hospital, 9 Ave. and 59 St., plans by York & Sawyer & Kiff Colean, Voss & Souder, 101 Park Ave., New York, 6 story hospital addn. (with 6 stories to be constructed later). $7,000,000.

▲ **Pa., Abington**—STORE—Sears Roebuck Co., 4640 Roosevelt Blvd., Phila., plans by The Ballinger Co., 1625 Race St., Phila., department store. $2,000,000. CD 2/27.

▲ **Pa., Narberth**—APARTMENTS—Gorchov Bros., 284 Montgomery Ave., Bala Cynwyd, plans by Burke & Scipione, 4812 Drexelbrook Rd., Drexel Hill, 4 apartment bldgs., Wynnewood Rd., etc. $1,000,000.

▲ **Pa., Phila.**—OFFICE—Bell Telephone Co. of Pa., 1835 Cherry St., plans by Maurice Fletcher, 226 S. 16th St., 16 story addn. with penthouse office, incl. 25 car garage. $6,000,000. Kneas & Long, 504 Woodland St., consult. engrs. CD 12/20.

▲ **Tex., Fort Worth**—SHOPPING CENTER, etc.—Holoday Development Co., c/o Chas. E. Armstrong, archt., 1013 E. University Dr., shopping center, $1,500,000; Hotel, $1,500,000, on Jacksboro Hy.

▲ **Tex., Fort Worth**—BANK AND OFFICE—Union Bank Trust Co., c/o Stuart Lydick, pres., 6 story, brick, tile, concrete steel, bank and office bldg., air conditioned, Main and Weatherford Sts. $1,000,000.

▲ **Ont., Elliott Lake**—HOSPITAL—Sisters of St. Joseph, 720 McLaren St., North Bay, plans by Govan, Ferguson, Lindsay, Kaminker, Langley & Keenleyside, 10 Price St., Toronto, 100 bed hospital, on 12-acre site, $2,000,000.

▲ **Ont., Toronto**—APARTMENT—Economy Constr. Co., Ltd., 786 Bay St., plans by Wilfred Shulman, 1171 Bay St., 200 suite-apartment, Keele St. and Sheppard Ave. W. $2,000,000.

▲ **Ont., Toronto**—APARTMENT—L. Klug Constr. Co., 159 Strathearn Rd., plans by S. Young, 12 Casimir Ave., 128-suite apartment, 658-662 Broadview Ave. $1,024,000.

▲ **Ont., Toronto**—DENTAL COLLEGE—University of Toronto, F. J. Hastie, supt., 226 Simcoe Hall, plans by Allward & Gouinlock, 354 Davenport Rd., 5 story, part structural steel, part rein-con., brick dental college. $2,500,000; R. P. Allsop & Assocs. Ltd., 290 Davenport Rd., consult. engrs. CD 1/28/55.

INDUSTRIAL BUILDINGS

▲ **Calif., Newport Beach**—RESEARCH CENTER—Aeronutronic Sys. Inc., Div. Ford Motor Co., 3000 Schaefer St., Dearborn, Mich., research center incl. laboratories office, prototype mfg. facilities and experimental installations. $8,000,000.

▲ **Ill., Forest View**—WAREHOUSE—Certified Grocers of Ill., 4800 S. Central Ave., plans by Carl M. Teutsch, 1105 W. Lawrence Ave., Chicago, 175,000 sq. ft. warehouse addn. $1,200,000.

▲ **Ind., New Albany**—REFRIGERATED FOODS—Pillsbury Mills, Inc., Pillsbury Bldg., Minneapolis, Minn., plans by Dunlap & Esgar, Inc., 333 North Michigan Ave., Chicago, Ill., 1 and part 2 story, 250,000 sq. ft. bldg. for refrigerated foods division. $2,000,000. CD 8/30.

▲ **Mo., St. Louis**—PLANT, etc.—Chrysler Corp., 344 Mass. Ave., Detroit, Mich., 1 story, 1,300,000 sq. ft. assembly plant, 2 story office, U. S. Hy. 66 near here. Total $50,000,000.

▲ **N. Y., Bedford Hills**—BAKERY—Arnold Bakers, Inc., 10 Traverse Rd., Port Chester, plans by J. Edwin Hopkins, consult. engr.-archt., 24 W. 40 St., New York, N. Y., bakery, Rte. 117. $2,000,000. CD 10/15.

▲ **N. Y., Tonawanda**—PLANT—American Brake Shoe Co., Mountain Ave., Rochester, Zone 11, plant to mfg. cast steel railroad car wheels. $8,000,000.

▲ **O., Barberton**—CEMENT PLANT—Columbia-Southern Chemical Corp., 1 Gateway Center, Pittsburgh 22, Pa., cement plant in Norton Twp., adjacent to present limestone mining operation of company. $7,000,000 or $8,000,000. Leonard J. Rimlinger, c/o owner, supt. of engr.

▲ **Tex., Freeport**—PLANT—E. J. Lavino & Co., 3 Penn Center Plaza, Phila., Pa., chemical plant near east Freeport city limits, Old Brazos River site near Dow Chemical Co. plant. $7,250,000. Food Machinery & Chemical Corp., 1105 Coleman St., San Jose, Calif., consult. engrs.

▲ **Tex., Houston**—PRODUCTION PLANT, etc.—National Petro-Chemicals Corp. of New York, c/o Dr. Rcb. E. Hulse, vice pres., 99 Park Ave., New York, N. Y., polyethylene production plant $20,000,000; warehousing $500,000. on Houston Ship channel.

▲ **Ont., Sarnia**—REFINERY—Canadian Oil Companies Ltd., 204 Richmond St. W., Toronto, refinery addn. $8,000,000.

UNCLASSIFIED

▲ **Missouri**—TRANSMISSION LINES, etc.—Sho-Me Power Co-operative, Marshfield, 305 mi. 69,000-volt power transmission lines, sub-stations and switching stations. $6,562,690.

(Proposal Advertisement see pp. 88 to 91)

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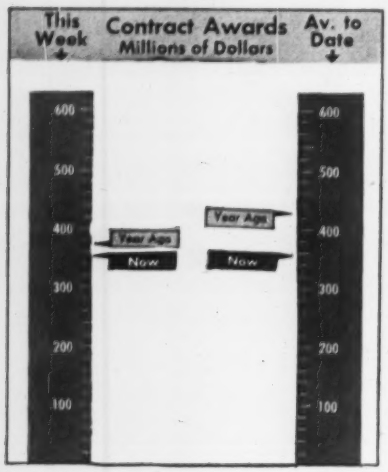
Construction Scoreboard

Activity this Week



AMOUNT OF CONTRACTS LET

By Ownership	This Week	Cum. 44 wks millions 1957	Chge '56-'57 %
Federal	$22.2	$2,025.8	+38
State and Municipal	124.7	6,350.3	+13
Total Public	146.9	8,376.1	+18
Total Private	223.8	7,416.9	−36
U. S. Total	$370.7	$15,787.0	−16
By Type of Work			
Waterworks	$14.3	$310.8	+1
Sewerage	13.0	472.6	−8
Bridges	15.5	615.3	+14
Highways	35.4	2,590.5	+21
Earthwork, Waterways	2.5	894.6	+38
Buildings:			
Public, Excl. Housg.	46.3	1,984.3	+12
Public Housing	18.4	591.0	+106
Private Housing	75.3	2,639.0	−45
Commercial	60.4	1,500.6	−8
Industrial	83.7	2,792.0	−39
Unclassified	5.9	1,396.3	−10
U. S. Total	$370.7	$15,787.0	−16

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

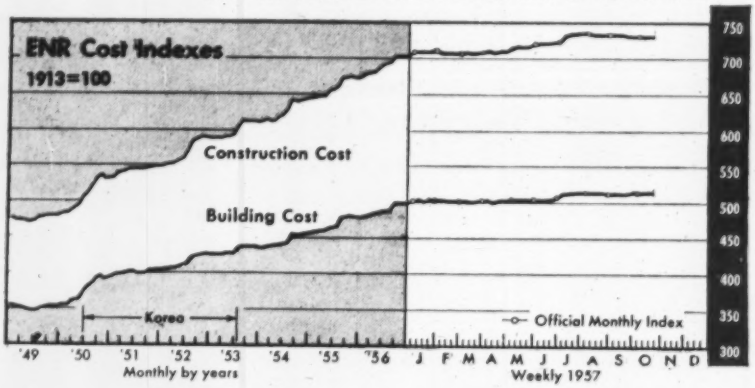
NEW CAPITAL FOR CONSTRUCTION

	Week of Oct. 24	Cum. 43 wks millions 1957	Chge '56-'57 %
Corporate Securities	$90.1	$4,883.5	+20
State and Municipal:			
All Except Housing	173.8	4,630.8	+21
Housing	...	155.8	+268
Federal Loans	1.9	176.2	+31
Federal Aid	...	2,161.2	+102
Total Nonfederal	$265.9	$12,007.5	+31
Federal Appropriations:			
In U. S.	...	$2,777.0	−20
Outside U. S.	...	29.0	+82
Total New Capital	$265.9	$14,813.4	+17

Cost Indexes as of Now

ENR INDEXES (1913 = 100), 20-cities' average	Week of Oct. 24 1957	% Change from Sept. 26 1957	% Change from Oct. 25 1956
Construction Cost	737.03	−0.04	+4.7
Building Cost	516.67	−0.05	+3.3

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850
1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518



BACKLOG OF PROPOSED HEAVY CONSTRUCTION

	Sept. 30 1957 (millions)	Percent Change from last Month	Year
Total U. S. (ENR reported)	$109,676	+0.9	+ 6.9
By Ownership—			
Private	46,152	+0.4	+ 5.0
State and Municipal	49,614	−0.1	+10.3
Federal	13,910	+6.8	+ 1.7
By Type of Work—			
Waterworks	2,357	+1.5	+ 8.5
Sewerage	3,282	−0.4	+ 5.8
Bridges	3,258	−0.7	+13.2
Highways	12,762	−0.4	+10.0
Earthwork, Waterways	12,351	+2.9	+ 9.0
Public Buildings	19,959	+0.6	+ 8.5
Industrial Buildings	16,514	+0.4	+0.3
Commercial Buildings	19,884	+0.5	+10.5
Unclassified, Private	9,754*	+0.2	+ 2.9
Unclassified, Public	9,553	+4.7	+ 4.1

* Includes private bridges, $86 million

FLOW OF NEW PROJECTS INTO THE BACKLOG

	1957 Sept. (millions)	9-months (millions)	Percent Change from '56 Sept.	Year Cum.
Total U. S. (ENR reported)	$1,944	$15,922	− 0.3	−16.6
By Ownership—				
Private	597	7,036	−38.9	−29.1
State and Municipal	408	7,386	−46.3	+ 0.2
Federal	939	1,500	+339.4	−15.8
By Type of Work—				
Waterworks	49	353	−50.1	− 6.8
Sewerage	24	434	−40.3	+ 5.4
Bridges	11	490	+77.0	+48.1
Highways	54	2,141	+79.2	+68.6
Earthwork, Waterways	420	1,116	+300.3	+79.7
Public Buildings	331	3,296	−21.4	− 9.9
Industrial Buildings	282	2,481	−53.0	−46.7
Commercial: Mass Housing	116	1,738	−23.9	−29.8
Other Building	150	1,989	−20.5	− 1.1
Unclassified, Private	48	828	+42.8	+ 7.6
Unclassified, Public	458	1,057	+911.4	−57.4

FLOW OF PROJECTS OUT OF BACKLOG INTO CONTRACTS

Total U. S. (ENR reported)	$676	$7,361	+19.2	−32.4
By Ownership—				
Private	284	2,761	+ 1.1	+34.9
State and Municipal	342	3,521	+44.3	+29.2
Federal	50	1,079	+ 2.0	+57.5

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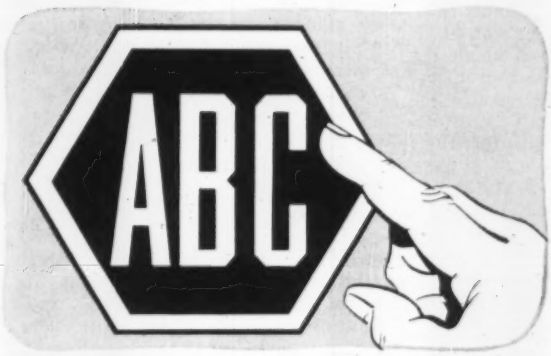

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Administration changes the rules and . . .

Lease-Purchase Returns to the Field

The Eisenhower Administration, after deliberately stifling the lease-purchase program since its inception, has suddenly decided to give it a new chance at working successfully.

That's the outlook following a recent decision to remove the 4% interest rate limitation that has applied to lease-purchase projects since the beginning.

Boxscore to date since 1954 is:

- One building erected, at Rock Island, Ill.
- Three bid openings, involving seven other projects, that produced nothing but unacceptable or unresponsive bids.

I. A Clean Slate

In effect, the slate is being wiped clean now and General Services Administrator Franklin Floete is free to go into the open market and negotiate for financing contracts on a bundle of needed federal building projects.

For reasons of political expediency, it seems a good bet in Washington that some—at least a handful—of buildings will result from this new action. If things are as they would seem on the surface, then it is reasonable to assume that in the next year or so most, if not all, of the existing authorized projects will begin to move.

If this should follow, it also seems likely that next year the Administration can get Congress to renew the lease-purchase program that, in disgust, it allowed to die in the past session.

To understand the new situation, it is necessary to sketch in a little background.

The Administration, fretting about keeping within the $275 billion debt ceiling, does not want Congress to carry through on voiced threats to make direct appropriations for federal buildings. At least, this would add probably $300 million to a straining budget; at most, it might lead to $1.5 billion or more within two or three years.

Lease-purchase was sought by the Administration because it could get some desired buildings in place on an installment plan—outside the budget and outside the debt ceiling.

A cynical viewpoint is that the Administration will allow a small number of proposed projects to go through—enough to satisfy "hungry" congressmen who have been promised new federal buildings for their districts.

II. Investors Seem Interested

Government people say that after Mr. Floete announced, with Budget Bureau and Treasury approval, the removal of the 4% interest ceiling the telephones have been ringing steadily. "Some leading bankers and financial institutions have assured us that they want to be solicited for bids, at least," says one source.

All that's definitely known is that the interest ceiling is no longer 4%. What it is—if indeed Budget and Treasury have silently set one—cannot, for obvious reasons, be told.

III. For Some, 'Second Life'

Last February, when it became apparent that the program was not working, Mr. Floete put it into a state of suspension on grounds that it had inflationary tendencies. Neither that suspension, nor the fact that Congress didn't extend the program, affected the validity of the 97 projects that already had been authorized.

Last week, Mr. Floete immediately dusted off for financing bids the following 10 projects (All are federal office buildings, post offices, courthouses or combinations thereof, except where specified otherwise):

- Atlanta, Ga., a communicable disease center for Public Health Service, $12.3 million.
- Albuquerque, N. M., $6.2 million.
- Abingdon, Va., $543,000.
- Burlington, Iowa, $1.3 million.
- Council Bluffs, Iowa, $1.6 million.
- Kansas City, Kans., $2,39 million.
- Omaha, Nebr., $9.57 million.
- Gainesville, Tex., $645,000.
- Huntington, W. Va., $3.29 million.
- Green Bay, Wis., $1.6 million.

The figures cited above are government's maximum cost estimates, overall; and include not only construction costs but also the cost of land acquisition and architectural plans.

Here's how the new attempt at lease-purchase is intended to work:

- GSA will require bidders on financing contracts to enter into firm commitments, which will then be held open for government acceptance during a 90-day period. GSA will use this 90 days of option time to turn around and solicit bids for construction.
- Once it has an acceptable construction bid, GSA will simultaneously enter into separate financing and construction contracts with the successful bidders.
- Government leases the land for a project to the investor at a nominal sum of $1 per year. The investor is further protected by holding all rights of ownership to the building, and additionally will be given a federal certificate of obligation.

IV. Lessons in the Past

It's ironic but it is also a fact that the first project on which GSA opened bids is the only one with which it has succeeded with thus far. The Rock Island project, estimated to cost $2 million overall, went to a Dallas corporation created solely to bid on it. The successful bid was $1.674 million—a combined construction-finance offering—repayable over 25 years at 4% interest. Construction is due to end Nov. 8.

(The combined bid has since been abandoned, because not many contractors want to be financiers, too.)

After that, the program went to pot. The same Dallas interests that bid in the Rock Island project tried again, with a combined finance-construction offering of $1.8 million, for 25 years at 4%. It was rejected as too high.

Down through the list, the story was much the same. GSA either got no bids—or bids that would have made final costs too high.

Overall costs on each project were pegged by Congress in each individual authorization.

But the rigidity of cost is much less severe now than in the past. Not only can bidders negotiate for realistic interest rates, but GSA has some discretion in the matter of overall cost estimates. Most of the outstanding projects were in 1955. Since then, construction costs have risen.

GSA is likely to try to keep within original ceilings, but the Comptroller General ruled last summer that, because of rising building costs, the ceilings could be lifted. There are two major qualifications attached to breaking through the original ceiling: Excess costs must be "reasonable," and there can be no major change in the individual building plans.

Besides the 10 projects now out for financial bids, the agency expects to put 30 more up for bids Dec. 31.

GEORGE S. GOODYEAR, president of NAHB, had to lead the organization through a second year of housing decline.

JOHN M. DICKERMAN, executive director of NAHB, was among those who led the fight for easier home financing.

NAHB—15 Years of Housing Crises

It's a big cake the homebuilders are cutting this month on the fifteenth anniversary of their national association. Congress iced the cake in July when it gave them almost everything they asked for. And the Administration applied the icing for them when the housing agencies put into effect the lower downpayments and higher interest rate that Congress had approved for FHA-insured mortgages.

So far, it is true, there is more frothy frosting than substance in the benefits of these actions. Easier terms don't create more money, and it's the money shortage that is crimping homebuilding. But, if the predicted easing of credit takes place in the year ahead, the homebuilders will cash in again on a victory spearheaded by their national organization—the latest triumph in a long list of major successes.

At the moment, its growth picture is mixed. Dwindling activity and profit possibilities in homebuilding have caused a slight and presumably temporary attrition in membership, though the roll still holds at the high mark of 40,000. At the same time that some individual homebuilders have been dropping out of the business, the number of local affiliates has increased. Recently the roster of active local chapters has gone up from 285 to more than 300—another indication that homebuilders are turning more and more to joint action in troubled times.

NAHB thrives on trouble. The national organization was conceived in crisis, born in travail and nurtured on adversity.

• **It seeks battle**—Washington construction reporters will tell you that the embattled war cries of the homebuilders are largely synthetic. If adversity does not rear its lovely head to be chopped off by the swords of NAHB, the organization's spokesmen will enlarge upon any slight obstacles that may be apparent with vivid word pictures that serve to keep the membership keyed up to fighting pitch.

There's nothing settled or serene about the 40,000 members or 100 staff people who keep NAHB going. A thousand interviews with officers, members and staffers have left one undying impression: No one of them is ever satisfied. They may be enthusiastic about an idea, or improving design, construction or financing of the American home, but they will never express satisfaction with the way the idea is being carried out. Even the 1957 housing law, good as it was, had flaws that you would hear about in the first 30 seconds of any NAHB soliloquy.

• **Never satisfied**—This unremitting dissatisfaction breeds a constant ferment. You feel it almost as soon as you cross the threshold of the handsomely contemporary, but slightly stiff and militant, $2.5 million structure that attempts to contain the headquarters of the homebuilders. The National Housing Center boils with activity and bristles with campaigns to overcome the obstacles in the path of builders attempting to build a better America.

And that last phrase—to build a better America—is not ironically intended. It is the good luck of the homebuilders that their own selfish interests coincide with national benefits. And, as a second piece of good fortune, they have developed strong leaders within their own ranks who bellwether a willing membership into sane and sound positions that offer a broad and forward-looking view of most problems.

There is a sneaking admiration buried in the amused tolerance with which construction and real estate reporters receive the tirades of the homebuilders. News analysts agree that NAHB operates the most successful wailing wall on the trade association front. The loud lamentations pay off in success after success.

It isn't the noise, of course, that wins victories for the homebuilders. The weeping and wailing are merely attention getters. Behind the loud laments is a solid body of effective argument built up by the hardworking NAHB committees and the organization's exceptionally competent staff. The noise may arouse a drowsy public and inspire endless letters from local businessmen—

. . . NAHB—15 years of housing crises

especially homebuilders, small and large—to congressmen. But the hard facts presented to the House and Senate Banking Committees by NAHB spokesmen and their allies in the building and home-financing business makes good sense as well as good politics in the things the homebuilders cry for.

NAHB efforts, however, are much bigger than mere lobbying, though the success of organization aims in other directions often depend in part on legislative cooperation, either national or local. In urban renewal, slum clearance, community planning, housing research, design, construction, taxes, labor relations, management, finance and economics, the association has devoted committees and officers with capable staff personnel at work on programs that are producing results from which the whole building industry and the entire economy derive benefit.

• **How it began**—How to build housing without materials or labor was the problem that brought NAHB into being. In the first days after Pearl Harbor, local builders in key areas faced the necessity of producing homes by the thousands for migrant war workers under soon-to-be-imposed materials controls and red-tape regulations that would strangle any effort that isolated builders could make.

To ward off this dire threat, which crystallized quickly, the Home Builders Institute (HBI) of the National Association of Real Estate Boards was hurriedly built up to take on the job of Washington representative for all the nation's homebuilders. The late Herbert U. Nelson, executive vice president, made a ten strike in getting Frank W. Cortright, Philadelphia homebuilder, to become executive secretary of the revitalized institute in February 1942. Mr. Cortright had shown his capacity as a leader in the Philadelphia Home Builders Association, one of the few organized local groups in the country at that time.

With one girl as his entire staff, Mr. Cortright promptly began the necessary build-up. Mr. Nelson then put through his second big idea: to make the institute independent. The umbilical cord was cut in October 1942, and the institute became the NAHB, afloat on the sea of autonomy with Mr. Cortright at the helm as executive vice president. He filled that job brilliantly until 1953 when he retired to make way for his capable successor, executive director John M. Dickerman, who had done outstanding work as NAHB's legislative liaison.

At the beginning, the membership roll listed only 298 builders in eleven local chapters. A quick merger with a like-minded group of smaller homebuilders—the former National Home Builders Association—promptly boosted the membership to 1,269.

HBI took over as the major organization in the merger because its members, though smaller in number, included the big land developers who built many more houses than did the larger total membership of the NAHB. With a slight change, the name of the second organization was adopted for the new national association.

The union gave the industry a single voice in 1943 under Fritz B. Burns of Los Angeles, first full-year president of the united front. Preceding him, presidents of the two separate organizations—Harry Durbin, David Bohannon and George Nixon—had contributed their talents to building up for a merged national association.

• **Top leaders**—From Mr. Burns to the present incumbent, George S. Goodyear, NAHB has been blessed by an unbroken line of able and aggressive presidents. Save for the peppery and engaging "Manny" Spiegel, now deceased, these leaders continue to help current officers through a past presidents' council that includes 16 active veterans.

In World War II days, the homebuilders emergency committee, headed by Judge Hugh Potter of Houston, carried through the association's fight for workable rules and useful legislation to make possible the building of some million war housing units.

At the same time, NAHB was waging an increasing and successful battle against the apostles of public housing. With strong allies like NAREB on the same side, NAHB's success then and through the years since has been phenomenal.

As spokesman for the nation's homebuilders, NAHB played a crucial postwar role in development of broader government mortgage insurance with easier terms and federal subsidy, when necessary, to speed the financing and construction of sales and rental housing. Except for one embarrassing slip-up, the association all this time was on the side of private enterprise as opposed to government controls.

• **One mistake**—At the end of the war, NAHB collectively and its members individually fought hard for removal of price controls, priorities, and allocations of building materials. The one dark chapter was written in 1946 when the NAHB board of directors succumbed to the persuasive arguments of Housing Expediter Wilson Wyatt for endorsement of premium payments to builders to stimulate faster production of more housing.

For a brief space, the NAHB stilled its opposition to this phase of the unlimited powers given Mr. Wyatt. The rest of the building industry and NAHB's own executive committee—when it realized the implications—were aghast at the association's action. President Joseph Meyerhoff and other NAHB officers struggled mightily to get the homebuilders off the hook. Before the year ended, they had succeeded, and the housing expediter had passed out of the picture, his program strangled in its own red tape.

Since that episode, NAHB has held staunchly to the private enterprise line.

In 1954, a bombshell hit private housing when the Administration and Congress broke into the headlines with charges of excessive and possibly illegal profits on the notorious Section 608 rental apartment projects. In the ensuing fight the incumbent FHA commissioner was deposed as a sacrificial gesture by the Administration.

NAHB had backed the 1942-1950 Sec. 608 program as a means of inducing investors and builders to erect desperately needed rental housing. Congressional committees, as well as builders and investors, were well aware of the profit incentive clearly offered by the legislation. Any above-average builder could net a tidy wad of ready cash by putting up an apartment project financed with an FHA 608 mortgage.

To the public and to Congress, however, the 608 scandals were a black mark against private homebuilding, but NAHB and related organizations in the building industry rode out the storm without any loss of influence of prestige. Their counsel is still as sought after and respected in legislative counsels and elsewhere as it ever was.

How potent that influence is can be traced through the record of national housing legislation in the fateful year of 1954 and since. In the last Congress, NAHB and the Administration lost the argument for a higher permissible interest rate on GI loans and against the imposition of discount controls on FHA mortgages. Otherwise, however, Congress went along generally with the advice of the homebuilders.

The battle over housing legislation has no end. Next year NAHB will be back on the legislative scene in a continuing fight to ease the pressures of tight money on the housing market and broaden the home ownership base.

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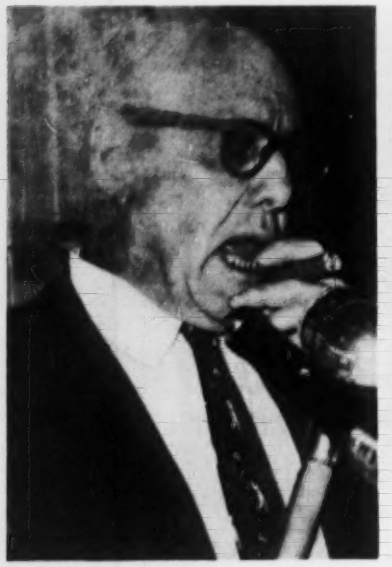

AFL-CIO PRESIDENT MEANY says teamster suspension will stand as long as . . .

JAMES HOFFA, controversial teamster figure, holds union office. Meanwhile . . .

FEDERAL JUDGE F. Dickinson Letts has questioned validity of Mr. Hoffa's election.

Teamsters Are Out But Door Is Open

Grimly determined to rid the labor movement of corruption, the AFL-CIO Executive Council last week suspended from the federation its biggest and most powerful affiliate—the International Brotherhood of Teamsters.

The suspension is effective immediately. But the door pointedly has been left open for teamster members to avoid expulsion, which will be recommended for AFL-CIO convention action in December unless remedial steps are taken before then. AFL-CIO President Meany made it clear that the most significant of these steps is the removal of James Hoffa from union office at international and local levels.

The suspension order, adopted by the full council on a 25 to 4 vote, occurred one day after Federal District Court Judge F. Dickinson Letts issued an injunction barring Mr. Hoffa and other teamster officials elected at the union's recent Miami Beach convention from taking office. According to Mr. Meany, however, the pending court action challenging the validity of the convention elections had "absolutely nothing" to do with the council's decision.

Following a tense three-hour meeting, at which a three-man delegation led by Mr. Hoffa appeared in defense of the union, the Executive Council bluntly accused the teamsters union of defying both the AFL-CIO constitution and the Executive Council, and charged it with "adherence to the principles of corrupt rather than the principles of free and honest trade unionism."

The suspension, which apparently will not affect teamster and AFL-CIO relationships at state and local levels immediately, specifies two conditions on which the union can still avoid expulsion. At the moment, all that is required to dissolve the suspension is union agreement to:

1. Permanently remove Dave Beck, James Hoffa, Frank Brewster and Sidney Brennan from all positions of authority within the union. (These are the individuals to whom most of the corruption has been attributed by the federation's Ethical Practices Committee and by the Senate Select Committee.)

2. Accept appointment of a special AFL-CIO committee to supervise and direct correction of the abuses presently existing within the union.

The tenor of the AFL-CIO condemnation of the teamsters union was reflected in Judge Lett's analysis of teamster affairs on which the anti-Hoffa injunction was based. Judge Letts said there is reasonable cause to believe—and this must still be established by litigation—that teamster officials, including Messrs. Beck and Hoffa, conspired to "rig and to otherwise improperly conduct" the Miami convention "on a dictatorial basis." Coupled with "dishonesty" in union stewardship, he concluded, thousands of teamster members have been disfranchised and the union's national and local treasuries have been imperiled. Net result, he said, is a threat to "the common good as well as to trade unionism in general." Teamster attorneys immediately filed a notice of appeal and indications are that the appeal will be heard later this week.

Voting against suspension were council members Maurice Hutcheson (carpenters), John English (teamsters), William Doherty (letter carriers) and Herman Winter (bakery workers).

• **Implications**—The big question posed by the council's action is the practical effect of the suspension. The union has a representative on the council (John English); membership and officer representation in several departments (including Dave Beck in the building trades); affiliation with a host of state and local AFL-CIO bodies; and alliances with a number of unions both in and out of the building trades.

At a press conference following the suspension, Mr. Meany said he saw "no reason for precipitate action," in unraveling existing ties with the teamsters until the suspension action is finalized. And this, he indicated, will

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depend for its timing on the action of the teamsters union in the immediate future. The Executive Council said it has put " the ultimate fate of the teamsters union squarely in the hands of the leadership of that union." And Mr. Meany commented: "We want to keep the teamsters in the federation but to keep them in compliance with our constitution—not at the price the teamsters are asking."

Although the suspension is not expected to have any immediate and practical effect on the day to day operations of union relationships until the situation has jelled further, the most pressing problem will be a decision on the eligibility of the teamsters to send delegates to the forthcoming departmental and federation conventions in December. It is clear that the union has lost the right to representation at the AFL-CIO convention—except for the purposes of appeal—but the status of teamster delegates to departmental conventions is a problem that Mr. Meany said must be faced very soon.

In its unsuccessful defense, the teamsters union professed a desire to remain in the federation, stressed its economic achievements, promised to comply with the ethical standards of the AFL-CIO and asked for a year's reprieve, in which to effect necessary reforms.

New Union Laws in the Making

Pressure mounting for restrictive labor legislation but results on federal level are apt to be moderate

A legislative purge of union corruption is being drafted for the next Congress.

An avalanche of ideas on how to erase the racketeering uncovered by the McClellan racket investigation committee of the U. S. Senate is flowing in—from all sides. And the proposals vary almost by the number of proponents for legislation.

With the election campaign moving into full swing, one thing is becoming certain: There will be new labor laws written by the second session of the 85th Congress, starting in January.

Prime targets are the big names of labor who bear the corruption label tagged on them by the McClellan investigators: Dave Beck and Jimmy Hoffa of the teamsters, Jim Cross of the bakery workers, Lloyd Klenert of the textile workers. And more are to come.

The only question is what kind of legislation will erase corruption from labor unions. Essentially, there are three points of view on how it should be done:

• The Eisenhower Administration's labor policy, directed by Labor Secretary James P. Mitchell, will sponsor some moderate restrictions on labor but they'll be more firm towards unions than the White House has offered before. Specifically, the Administration wants secret ballot voting for union leaders, restrictions on picketing for organizing purposes, checks on union funds.

• Conservative Republicans, such as California gubernatorial candidate, Senator William F. Knowland, want some major re-writing of labor legislation. A federal right-to-work law is being proposed, application of tax and anti-trust laws to now-exempt unions, mandatory democratic procedures for unions and so on.

• Organized labor, itself, is hoping to ride through the storm without any extensive legislation. But it's proposing some federal controls, specifically over health and welfare funds. Otherwise, labor believes it can police its own house, or at least, hopes to try by itself.

• **The compromise**—What finally is passed in Congress still depends on the future; how much house-cleaning George Meany's AFL-CIO goes through; how much more corruption is turned up by McClellan committee general counsel Robert Kennedy and his dozen staff investigators.

But, at this point, the best bet to see his proposals go through Congress is Labor Secretary Mitchell. His route is the middle way; it has the advantage of both sides by coming up with some new restrictions on labor, but without going whole hog for what Mr. Mitchell says will "destroy the social and economic gains" of the American worker.

In his proposals, however, Mr. Mitchell goes farther than he ever has before. Federal checks on welfare funds and public disclosure of union finances aren't new. And the "secret ballot" plan for union elections is not startling. But Secretary Mitchell does get into union bread-and-butter practices when he tackles organizational picketing. This device, which he describes as "blackmail" picketing, is used by a union to organize workers where it has been resisted by both employer and his employees.

The Administration's plan has the added advantage of securing some support from moderates on both sides of the political aisle. Too, it's directed at union leaders and not union members.

But the proponents of more extensive legislation, such as Senator Knowland, will have their share of support. Certainly, the current atmosphere gives this side a better-than-ever chance of making some headway.

What the conservative forces are seeking would have a much greater effect on union operations. A right-to-work law would outlaw the union shop, anti-trust laws could break up the giant industrial unions, checks on use of union dues could limit labor's political activity. While such a legislative package has little chance, it would help to spur the more-moderate legislation through Congress.

• **Labor's chances**—By its active anti-corruption campaign against the teamsters (see page 84) and other unions, the AFL-CIO is cutting into the legislative curbs that will come from Congress. It may also launch a $1.2 million publicity campaign to win back some of the public confidence it's lost.

This won't prevent some legislation. But, because Taft-Hartley and other labor laws will be opened up for review, the AFL-CIO move enhances the chances of some union-sponsored legislation. Specifically, AFL-CIO building trades unions will have a better chance this next session of putting through some of their long-sought legislation: Making pre-hire contracts legal, easing secondary boycott restrictions at the construction site. However, another favorite proposal—erasing the Taft-Hartley provision that permits state right-to-work laws—is out the window.

New Three-Year Contract Boosts Bricklayers' Pay

Union bricklayers in Rhode Island will get paid 55 cents an hour more over the next three years under a new labor agreement between Local 1 and the Rhode Island Chapter, Associated General Contractors.

The new contract, which raises wages from $3.50 to $4.05 an hour by Oct. 19, 1959, was concluded just before the deadline was reached for a strike that would have idled more than 300 bricklayers and $20 million worth of major construction.

Under the agreement, which expires Sept. 25, 1960, bricklayers will receive wage boosts of 7½ cents now, 17½ cents more on Oct. 20, 1958, and an additional 20 cents on Oct. 19, 1959.

Although the amount is still undetermined, a portion of the increases will go into a health and welfare fund.

OFFICIAL PROPOSALS

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New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., eastern standard time, on the 21st day of November 1957, by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 4, B. F. PERRY, District Engineer, Barge Canal Terminal, Rochester 1, New York						
Monroe	FASS 57-16	Thomas Avenue, Co. Rd. Project S-487(1)	1.54	Asph. Conc.=1.46 Mi. Misc. Work=0.08 Mi.	$26,000 Plans $2	$459,000
DISTRICT No. 5, E. G. H. YOUNGMANN, District Engineer, State Office Bldg., 65 Court Street, Buffalo 2, New York						
Erie	GISP 57-1	Grand Island State Parkway: South Parkway Extension (GISP 53-1) and South Parkway (GISP 51-1)	3.19	Sidewalks, Aluminum Chain Line Fencing & Misc. Work	$6,500 Plans $2	115,000
Erie	FARC 57-174	Transit Pts. 1 & 4, SH 88 & 1334-A-1 Project U-651(A)	2.00 (0.63 Acc.)	Asph. Conc.=2.52 Mi.; Misc. Work=0.11 Mi.; Prestress, Conc. Beam Bridge 124'	$60,000 Plans $3	1,074,000
Niagara	FAC 57-15	City of Niagara Falls: Arterial Rte., Walnut Ave. & Ferry Ave. (Main St. to Pine Ave. & Packard Rd.) Project U-509(9)	4.35	Asph. Conc.=4.22 Mi.; Misc. Work=0.13 Mi.; Prestressed Conc. Bridge 76'.	$86,000 Plans $25	1,585,000
DISTRICT No. 7, ROBERT W. SWEET, District Engineer, 444 Van Duzee Street, Watertown, New York						
Clinton	FISH 57-23 FIC 57-21 FARC 57-175	Interstate Rte. 502, Sect. 7B-2 (Rugar St. to Cumberland Head Rd.): Plattsburg-Mooers Pt. 2, SH 259; SH 777; Tom Miller Rd. and Moffit Rd. Project I-IG-1119(10); F-576(4)	4.70 (11.94 Acc.)	Asph. Conc. Type 1A=16.60 Mi.; Misc. Work=0.04 Mi.; 4 Hy. Sups. I-Beams 181.9', 284.8', 249.2' and 246.5'	$460,000 Plans $20	8,341,000
Jefferson	FISH 57-21	Interstate Route 505 (Sect. 7AB-3) SH 183, SH 1181, CR 161, CR 95 and CR 94. Project I-1118(14)	5.51 (5.64 Acc.)	Asph. Conc. Type 1A=11.11 Mi.; Misc. Work=0.04 Mi.; 3 Hy. Sups. Comp. I Beams 122', 115.8' and 316.5'	$255,000 Plans $20	4,629,000
DISTRICT No. 10, M. E. GOOD, District Engineer, 325 W. Main Street, Babylon, L. I., New York						
Suffolk	FASH 57-22	Sunrise Highway Extension (Shinnecock Canal Bridge) Project F-559(11)	0.13	Cement Conc. Pavt.=0.07 Mi.; Misc Work=0.06 Mi.; Weld. Pl. Girder Br. 374'	$45,000 Plans $3	830,000

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage) Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended; and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders".

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: November 6, 1957.

Cable Guide Railing and Wire Fencing Contract 448

SEALED BIDS will be received by the Board of Water Supply at its offices, thirteenth floor, 120 Wall Street, New York City until 11:00 A.M. Eastern Standard Time on Wednesday, November 6, 1957, for Contract 448, for furnishing, delivering and erecting about three miles of cable guide railing and about four miles of wire fencing, including gates; the removal and disposal of about 2,700 feet of existing railing and fencing, and the repairing and rehanging of certain existing gates are also incuuded in the work to be done under this contract. The proposed work is located along the Delaware system in Delaware, Sullivan, Ulster, Orange, Dutchess, Putnam and Westchester counties, New York.

Pamphlets of the contract containing information for bidders, forms of bid and contract, specifications, contract drawings, requirements as to surety, etc., can be obtained in the Secretary's office, Room 1312 at the above address, upon application in person or by mail, by depositing the sum of $5.00 for each pamphlet. Within 30 days following the award of contract or rejection of bids the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of $4.00 will be made for each other pamphlet returned in acceptable condition. Arrangements will be made whereby prospective bidders desiring blueprints of the contract drawings for their use may secure same, the cost thereof to be paid by them.

ARTHUR C. FORD, President, EDWARD C. MAGUIRE, HERBERT M. ROSENBERG, Commissioners; Board of Water Supply; BETTY COHEN, Acting Secretary.

Read the Official Proposal Columns of

ENGINEERING NEWS-RECORD

This Week and Every Week

OFFICIAL PROPOSALS

Bids: November 21, 1957

City of Springfield, Missouri
Sewage Works Improvements
Divisions G, H & K

ADVERTISEMENT FOR BIDS

The City of Springfield, Missouri, will receive sealed Proposals for the construction of Main Trunk Sanitary Sewers until 10:00 A.M., Central Standard Time, on the 21st day of November, 1957, at the office of the City Clerk, Springfield, Missouri.

All Proposals received will be publicly opened and read aloud in the City Council Chambers at Springfield, Missouri, beginning at 10:00 A.M., Central Standard Time, on the 21st day of November, 1957.

The Contract Documents, including plans and specifications, are on file and available for inspection at the office of the Director of Public Works of the City of Springfield at Springfield, Missouri, and at the office of Consoer, Townsend & Associates, Consulting Engineers, 360 East Grand Avenue, Chicago 11, Illinois.

Copies of Documents, including plans and specifications, required for review or bidding purposes may be obtained only from the Director of Public Works by depositing $20.00 for proposed Division G, $20.00 for proposed Division H, and $20.00 for proposed Division K at the office of the Director of Public Works for each set of Documents so obtained.

The Documents, excluding the plans, for Divisions G and H comprise forms, information and specifications applicable to both Divisions and a single document will be issued upon request for plans for one, or both, for Division G and H. The Documents, excluding the plans, for Division K are separate and will be issued as a single Document upon request.

The full amount of the deposit for one set of Documents and one-half of the deposit for any additional sets of Documents will be refunded to each bidder who submits a formal Proposal to the City of Springfield and who also returns the plans (and specifications on additional sets) in good condition to the Director of Public Works within ten (10) days after his bid security has been returned to him.

Equipment manufacturers, subcontractors, and others who do not submit formal Proposals to the City of Springfield will be refunded one-half (½) the amount of the deposit for all sets of complete Documents, including plans and specifications, returned in good condition to the Director of Public Works within ten (10) days after the opening of bids. No refund will be made for Documents received by the Director of Public Works after this ten (10) day period.

A certified check or bank draft, drawn on a solvent bank, payable without condition to the City of Springfield, Missouri, in an amount not less than five percent (5%) of the bid shall be submitted with each Proposal, as a guarantee that if the Proposal is accepted by the City of Springfield, a contract will be entered into and the performance of the contract properly secured.

No bid shall be withdrawn after the opening of Proposals without the consent of the City of Springfield, Missouri, for a period of thirty (30) days after the scheduled time of closing bids. The bid securities of all bidders, except that submitted with the lowest acceptable Proposal on each Division, will be returned within ten (10) days after the time of opening bids. The bid security of the lowest acceptable Proposal on each Division may be held by the City of Springfield until a construction contract has been executed and a satisfactory Performance Bond and a satisfactory Labor and Material Bond in the sum of the full amount of his contract has been delivered to the City.

The City of Springfield reserves the right to reject any or all Proposals and to waive any informalities or irregularities in the bids received, or to accept any Proposal on any one Division or a combination of Divisions which is deemed most favorable to the City, at the time and under conditions stipulated in the Instructions to Bidders. The improvements on which Proposals are solicited are divided into three (3) Divisions and bidders may submit a Proposal on any one, any two, or all Divisions as listed in the Proposal Form. The Proposal on each Division shall include the furnishing of all labor, materials, equipment, tools, supplies, etc., for a complete operating installation. The work to be constructed under each Division is briefly described as follows:

DIVISION G—PHELPS GROVE TRUNK SEWER

This Division includes the furnishing and installation of approximately 16,000 lineal feet of reinforced concrete pipe sewers in 24" and 36" sizes, complete with appurtenances.

DIVISION H—JORDAN CREEK TRUNK SEWER

This Division includes the furnishing and installation of approximately 12,000 lineal feet of reinforced concrete and reinforced concrete pressure pipe sewers in 36" and 42" sizes, complete with appurtenances.

DIVISION K—MODIFICATIONS TO NORTHWEST OUTFALL SEWERS

This Division includes the replacement of approximately 3,420 lineal feet of existing sewers in sizes ranging from 12" to 30". The replacement sewers will be cast iron and prestressed concrete cylinder pipe and prestressed concrete cylinder pipe in reinforced concrete cradle.

Plans and specifications for this project were prepared by Consoer, Townsend & Associates, Consulting Engineers, 360 East Grand Avenue, Chicago 11, Illinois.

Any and all contracts entered into for the construction of Divisions G, H and K are subject to the terms of Public Law 294 concerning the payment by contractors of the prevailing schedule of wages as established by the Industrial Commission of the State of Missouri; said prevailing schedule of wages forms a part of the Documents for all of said Divisions.

Dated at Springfield, Missouri, this 21st day of October, 1957

CITY OF SPRINGFIELD, MISSOURI
By: W. B. Avery, City Manager

Bids: November 14, 1957

Covering Old Erie Canal

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Canal Law and Highway Law, sealed proposals will be received, until 10:30 A.M., on November 14, 1957 by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, the Governor Alfred E. Smith State Office Building, Albany, New York, for:

Contract M 57-14 for Covering Old Erie Canal, Diamond Street to Peterboro Street, Village of Canastota, Madison County, New York. Engineer's Estimate for Contract M 57-14 is $67,00.00.

Maps, Plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 14th Floor, Gov. A. E. Smith State Office Bldg., Albany, New York.

(b) Department of Public Works, 270 Broadway, New York City, New York.

(c) In addition to the above mentioned offices, plans, maps and specifications for Contract M 57-14 may be examined and obtained at the office of Mr. Lacy Ketchum, 109 North Genesee St., Utica 1, New York.

The deposit for Plans and Proposal Forms for Contract M 57-14 is $15.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Proposals for M 57-14 must be submitted in a separate, sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" in the amount of $3,500.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Canal Law and to the Highway Law as set forth in "Instructions to Bidders" in the contract specifications.

The right is reserved to reject any and all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Prequalification Date: November 7, 1957

Board of Education
Bureau of Construction

Notice Re: Prequalification Forms for Contractors

APPROVED AS TO FORM
Acting Corp. Counsel

NOTICE IS HEREBY GIVEN THAT

The Superintendent of School Buildings, Bureau of Construction, 4th Floor, Room 407, 42-15 Crescent Street, Long Island City 1, N. Y. will receive applications for prequalification from contractors who may wish to submit bids for the proposed hereinafter specified contracts as follows:

general construction, plumbing and drainage, heating and ventilating, and electrical work and lighting fixtures for Public School 3, South Goff Ave., Latourette Street, Cordella Avenue and Everett Place, Pleasant Plains, Borough of Richmond.

Prequalification application forms will have to be secured from and must be submitted to the Superintendent of School Buildings, Bureau of Construction, 4th Floor, Room 407, 42-15 Crescent Street, Long Island City 1, N. Y.

Bids, when advertised, will be received from prequalified bidders only.

Time for submitting prequalification applications by contractors will expire on Thursday, November 7, 1957.

WILLIAM H. CORREALE
Superintendent of School Buildings
Design and Construction

Dated: October 17, 1957

Bids: November 29, 1957

Grade Crossing Elimination Project

Sealed proposals for the elimination of a grade crossing at Grove Avenue, Metuchen, N. J., will be received at the office of the Assistant Chief Engineer-Construction of the Pennsylvania Railroad Company, 1640 Transportation Center, Six Penn Center Plaza, Philadelphia 4, Pa., until 10:00 A.M., E.S.T., on the 29th of November, 1957, at which time proposals will be publicly opened and read.

This project is being constructed under an Order of the Board of Public Utility Commissioners of New Jersey.

The major items of work include the following approximate quantities:

Railroad Roadway	
Excavation	4,510 c.y.
Bridge	
Foundation Excavation	2,900 c.y.
Foundation Concrete	570 c.y.
Neat Concrete	940 c.y.
Struct. Stl. & W.I. Plate	560,000 lbs.
Reinforcement Steel	95,000 lbs.
Bituminous Concrete	390 sq. yds.
Stone Backfill	170 c.y.
Temporary steel sheet piling	4,400 sq. ft.
Highway	
Roadway Excavation	18,200 c.y.
Sidewalks	800 s.y.
Pipe railings	1,220 l.f.
4" concrete base course	4,400 s.y.
2½" Macadam intermediate course	4,400 s.y.
1½" Asphalt Wearing Surface	4,400 s.y.
Top Soiling and Seeding	4,500 s.y.
Miscellaneous	
4" Transite Ducts	3,000 l.f.
36" R.C. Pipe	220 l.f.
24" R.C. Pipe	350 l.f.
12" R.C. Pipe	200 l.f.
8" W.I. Pipe	400 l.f.
Curbing	857 l.f.

Contract documents may be seen at the above-named office and will be furnished upon deposit of $10.00 per set, which will be refunded upon the return of the documents in good condition within 20 days after the date on which bids are received.

Proposals must be submitted in a sealed envelope marked "Grove Avenue Grade Crossing".

Each proposal must be accompanied by a certified check of the bidder, payable to the Pennsylvania Railroad, or a bid bond to the favor of the Railroad Company, from a reliable surety company authorized to do business in the State of New Jersey, in an amount equal to five (5%) per cent of the amount of the proposal.

The right is reserved to reject any or all bids.

J. F. Piper—Assistant Chief Engineer—Construction

The Pennsylvania Railroad Company

OFFICIAL PROPOSALS

Bids: November 15, 1957

Martha's Vineyard Regional High School

ADVERTISEMENT FOR BIDS

Sealed proposals for the new Martha's Vineyard Regional High School in Oak Bluffs, Massachusetts, will be received by Perley F. Gilbert Associates, Inc., Architects and Engineers as agent for the Martha's Vineyard Regional High School Building Committee, which is the Awarding Authority until Friday, 3:00 p. m., E.S.T., November 15, 1957, at the office of the Architect, Sun Building, Lowell, Massachusetts, and will be publicly opened and read immediately thereafter. The general contract bid must be for the complete project including all registered sub-bids.

Registered filed sub-bids will be taken on Roofing and Sheet Metal, Metal Windows and Trim, Waterproofing and Caulking, Lathing and Plastering, Acoustical Tile, Ceramic Tile, Resilient Tile, Glass and Glazing, Painting, Plumbing, Heating and Ventilating, Electrical, Chalkboards and Corkboards, and Folding Partition.

Filed sub-bids must be received by the Architect as agent for the Martha's Vineyard Regional High School Building Committee, which is the Awarding Authority until Friday, November 8, 1957, 12:00 noon, E.S.T., at the office of the Architect, Perley F. Gilbert Associates, Inc., Sun Building, Lowell, Massachusetts.

All proposals, both sub and general, must be submitted on prescribed forms and enclosed in a sealed envelope bearing on the outside the bidder's name and address and endorsed, "Bid for Martha's Vineyard Regional High School, Oak Bluffs, Massachusetts," and addressed to Martha's Vineyard Regional High School Building Committee, care of Perley F. Gilbert Associates, Inc., Sun Building, Lowell, Massachusetts.

The general contractors must state specifically in their bid the sub-contractors whom they are carrying. All contractors must bid on all alternates and unit prices as outlined in "Instruction to Bidders." Plans and specifications may be examined without charge at the office of the Secretary-Treasurer of the Regional High School Building Committee, Mr. William M. Honey, Martha's Vineyard National Bank, Vineyard Haven, Massachusetts; Dodge Reports, Park Square Building, Boston, Massachusetts; Gainey's Construction Newsletter, 89 State Street, Boston, Massachusetts; and the main office of the Architect, Perley F. Gilbert Associates, Inc., Sun Building, Lowell, Massachusetts.

Plans and specifications may be obtained from October 24, 1957 until November 4, 1957, at the office of the Architect, Perley F. Gilbert Associates, Inc., Sun Building, Lowell, Massachusetts. A deposit of a certified check for $150.00 payable to the Architect will be required. One hundred and fifty dollars will be refunded to all contractors who file a legitimate bid when a general contractor is selected and all documents have been returned. To non-bidders returning all documents, a refund of $75.00 will be made. For the convenience of Heating and Ventilating, Electrical, or Plumbing sub-contractors, sub-sets may be obtained by making application to the office of the Architect, Perley F. Gilbert Associates, Inc., Sun Building, Lowell, Massachusetts, upon payment of $100.00. One hundred dollars will be refundable to all who file a legitimate bid. To non-bidders returning all documents, a refund of $50.00 will be made.

Each general contractor and filed sub-contractor must deposit with his bid, a bid security of cash, or Massachusetts cashier's check, or a certified check drawn on a Massachusetts National Bank or Massachusetts Trust Company. The exact amount of security required shall be as listed in the "Instruction to Bidders." None of the low bidders may withdraw his bid for a period of thirty (30) days after the opening of bids.

The successful bidder will be required to furnish in triplicate a Surety or Performance Bond for 100 per cent of the contract price and a Labor and Materials Bond equal to 50 per cent of contract price issued by an insurance or bonding company approved by the Awarding Authority and the Architect.

All contractors estimating shall abide by the minimum wage schedule established for this area for all labor under this contract. Each proposal must conform to all provisions of the General Laws (Ter. Ed.) Chapter 149, Sections 26, 27, Acts of 1939 as amended and Chapter 645 and 609, Act of 1956 and Chapter 679, Acts of 1936, Section 44A through 44L.

The Awarding Authority has the right to reject any and all bids from the general contractors and sub-contractors and to accept any bid it deems to be in the best interest of the Martha's Vineyard Regional High School District.

If the sub-contract work is awarded to a sub-contractor other than the one contained in the proposal submitted by the General Contractor, the amount of the contract prices shall be increased or decreased as the case may be in proportion to the amount submitted by the Sub-contractor who receives the award. All bids must be in duplicate.

Specifications for kitchen equipment, science room equipment, classroom furniture, lockers, stage equipment, and shop equipment will be advertised at a later date.

Martha's Vineyard Regional High School Building Committee
Arnold Fischer, Chairman
Perley F. Gilbert Associates, Inc.
Architects and Consulting Engineers
Herbert H. Glassman, A. I. A.

Bids: November 19, 1957

Project: Alterations & Additions to the Administration Building Broome County Airport

NOTICE TO BIDDERS

Binghamton, New York
October 21, 1957

1. SEALED BIDS, in duplicate, for furnishing all labor and materials and performing all work for the above described project, in accordance with the plans and specifications, subject to the conditions contained herein, will be received until 11:00 A.M., Tuesday, November 19, 1957, at the office of the Clerk of the Board of Supervisors, Broome County Office Building, Binghamton, New York, and then publicly opened and read.

2. Copies of the plans and specifications may be obtained from the Clerk of the Board of Supervisors, Broome County Office Building, Binghamton, New York, upon payment of a charge of $50.00 for each set requested. Check and money orders should be made payable to the order of the County Treasurer, Broome County, New York. Any bidder upon returning such set promptly and in good condition, will be refunded his payment, and any non-bidder upon so returning such set will be refunded $25.00.

3. Plans and specifications will be available for inspection at the offices of: Conrad & Cummings, Associated Architects, 99 Collier Street, Binghamton, New York; Guy B. Panero Engineers, 420 Lexington Avenue, New York; F. W. Dodge Corp., 79 Niagara Street, Buffalo, New York; Syracuse Builders Exchange, 1045 James St., Syracuse 3, New York; Associated Bldg. Contractors of the Triple Cities, 116 Eldredge St., Binghamton, N. Y.

4. Certified check or bid bond for a sum of not less than 5% of the bid will be required for each bid, payable to the order of the County Treasurer, Broome County.

5. Payment and performance bonds in the amount of 100% of the contract sum will be required.

6. The right is reserved, as the interest of the Owner may require, to reject any or all bids, to waive any informality in bids received, and to accept or reject any items of any bid.

7. Envelopes containing bids must be sealed and marked as follows:

Bid for Alerations and Additions to the Administration Building for Broome County Airport, to be opened at 11:00 A.M., Tuesday, November 19, 1957.

8. The right is reserved, as the interest of the Owner may require, to revise or amend the plans and/or specifications prior to the date set for opening bids. Such revisions and amendments will be announced by addenda to all prospective bidders.

9. All contracts subject to the Broome County Sales and/or Compensating Tax.

HOWARD DAVIS
CLERK OF THE BOARD OF
SUPERVISORS, BROOME COUNTY,
NEW YORK

READ THE OFFICIAL
PROPOSAL COLUMN OF
ENGINEERING NEWS-RECORD
THIS WEEK AND EVERY WEEK

OFFICIAL PROPOSALS

Bids: November 26, 1957

Mackinac Bridge Authority

Advertisement for Proposals
for
Tower Elevators
for the
Mackinac Bridge

The Mackinac Bridge Authority will receive sealed proposals for Contract No. 12, Tower Elevators for the Mackinac Bridge until 2:00 P.M., Eastern Standard Time on the 26th day of Nov. 1957, at the office of the Authority, Mackinac Bridge, St. Ignace, Michigan, at which time and place proposals will be publicly opened and read aloud.

The work includes the following:

Furnishing and installing two (2) service elevators, one in each of the main towers of the suspended spans, with all equipment and incidental work thereto for a complete installation ready for operation.

Plans, Specifications, Proposal Form and Contract Documents for the work are on file in the office of the Mackinac Bridge Authority and in the office of D. B. Steinman, Consulting Engineer, 117 Liberty Street, New York 6, New York, and may be inspected by prospective bidders during office hours.

Plans, Specifications, Proposal Form and Contract Documents may be obtained from D. B. Steinman, Consulting Engineer, 117 Liberty Street, New York 6, New York upon application and payment of a fee of fifteen ($15.00) dollars, ten ($10.00) dollars of which will be refunded upon return of the Plans to non-bidders, and all of which will be returned to bidders.

Bids must be made upon the proposal form included in the Contract Documents. Each proposal must be accompanied by draft or certified check payable to the order of the Mackinac Bridge Authority for the sum of ten thousand ($10,000.00) dollars.

The right is reserved to reject any or all bids.

MACKINAC BRIDGE AUTHORITY
Prentiss M. Brown, Chairman
October 22, 1957

Bids: November 14, 1957

Soil Explorations and Foundation Investigations

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 a.m. Eastern Standard Time, on November 14, 1957, by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATIONS AT VARIOUS SITES ON INTERSTATE ROUTE 515, NORTHERN BOULEVARD, WHITESTONE PARKWAY AND FLUSHING RIVER BRIDGE, PROJECT I-1125(1) QUEENS COUNTY, WHICH CONSTITUTES CONTRACT NO. SPEC. FA-SM-108.

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, New York.
(b) Mr. M. E. Goul, District Engineer, New York State Department of Public Works, 325 West Main Street, Babylon, Long Island.
(c) Mr. William M. Trainer, Associate Contract Engineer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50 percent of deposit.

The Engineer's Estimate of cost for this work is $23,410.00.

Proposal for this contract must be submitted in separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $1500.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders".

The right is reserved to reject any or all bids.

J. W. JOHNSON
SUPERINTENDENT OF PUBLIC WORKS

OFFICIAL PROPOSALS

Bids: November 8, 1957.

Galeton Borough Authority

SEALED PROPOSALS will be received by the GALETON BOROUGH AUTHORITY at the office of the said Galeton Borough Authority, Community Bldg., Sherman St., Galeton, Pennsylvania, until 8:00 P. M. (E. S. T.), on the 8th day of November, 1957, for the furnishing of all necessary labor, materials and equipment, and for the performance of all work for the (1) General Construction of a Sewage Treatment Plant; and/or (2) Electrical Construction of the said Sewage Treatment Plant; and/or (3) General Construction of Intercepting Sewers and other Sewer Facilities, in the Borough of Galeton, Pennsylvania. Proposals will be publicly opened and read at the above appointed time and place.

Each proposal must be accompanied by a certified check, bank cashier's check, treasurer's check, or by a bid bond executed by a corporate surety qualified to do business in the Commonwealth of Pennsylvania, drawn to the order of or naming as obligee the GALETON BOROUGH AUTHORITY, and in an amount not less than Five per centum (5%) of the base bid, as a bid guaranty; Provided, however, that the maximum bid guaranty shall be Five Thousand ($5,000) Dollars for each bid submitted.

Copies of the Contract Documents, including bid proposal forms and the plans and specifications, may be obtained at the office of HILL & HILL, Engineers, 8 Gibson Street, North East, Pennsylvania, or from the Secretary of the Galeton Borough Authority, Community Bldg., Galeton, Pennsylvania, upon the deposit of Thirty ($30.00) Dollars for each set. A refund will be made in full to bona fide and actual bidders upon the return of one set in good condition within five (5) days after the date for the receipt of bids. A refund for the return of all other sets in good condition within the same period will be in the amount of Fifty per centum (50%) of the deposit.

No bid may be withdrawn for sixty (60) days after the date for the receipt and opening of bids as above set forth.

Successful bidders will be required to furnish surety bonds and evidences of required insurance coverage in the amounts and at the time as set forth in Information for Bidders and in the General Conditions.

Galeton Borough Authority reserves the right to reject any or all bids, or to accept or reject any part of any bid, and to waive any informalities in any bid.

GALETON BOROUGH AUTHORITY
By: B. E. Kramer

Bids: Nov. 7, 1957

Soil Explorations and Foundation Investigations

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 a.m. Eastern Standard Time, on November 7, 1957, by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATIONS AT VARIOUS SITES ON INTERSTATE ROUTE 512, CLOVE LAKES EXPRESSWAY, GOETHALS BRIDGE APPROACH TO WEST END OF NARROWS BRIDGE APPROACH, PROJECT I-1066(18), RICHMOND COUNTY, WHICH CONSTITUTES CONTRACT NO. SPEC. FA-SM-105.

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, N. Y.
(b) Mr. M. E. Goul, District Engineer, New York State Department of Public Works, 325 West Main Street, Babylon, Long Island.
(c) Mr. William M. Trainer, Associate Contract Engineer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50 percent of deposit.

The Engineer's Estimate of cost for this work is $21,900.00.

Proposal for this contract must be submitted in separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $1100.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders."

The right is reserved to reject any or all bids.

J. W. JOHNSON
SUPERINTENDENT OF
PUBLIC WORKS

Bids: November 14, 1957

Substitute Parking Facility at Westover

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Building Law and Highway Law, sealed proposals will be received until 10:30 A.M. on November 14, 1957 by Henry A. Cohen, Director of Bureau of Contracts, 14th Floor, the Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

Contract F.C. 57-4 for Substitute Parking Facility at Westover, Unit No. 1, Endicott, Johnson City and Vestal Flood Control Project, Broome County, New York. Engineer's Estimate for Contract F.C. 57-4 is $52,000,00.

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 14th Floor, Gov. A. E. Smith State Office Bldg., Albany, New York
(b) Department of Public Works, 270 Broadway, New York City, N. Y.
(c) In addition to the above mentioned offices, plans, maps and specifications for Contract F.C. 57-4 may be examined and obtained at the office of Mr. Joseph C. Federick, 71 Frederick Street, Binghamton, New York.

The deposit for Plans and Proposal Forms for Contract F.C. 57-4 is $10.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Proposals for F.C. 57-4 must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" in the amount of $3,000.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Building Law and to the Highway Law as set forth in "Instructions to Bidders" in the contract specifications.

The right is reserved to reject any and all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: November 12, 1957

Contract BP-120.008

THE PORT OF NEW YORK AUTHORITY
BROOKLYN-PORT AUTHORITY PIERS
PIER 11
DEMOLITION OF SHED ON PIER 34

Sealed proposals for the demolition and disposal of the shed on Pier 34 in Atlantic Basin at the Brooklyn Port Authority Piers will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, November 12, 1957, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1115. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company. Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, October 31, 1957

Bids: December 2, 1957

Constructing of Bridge Creek Dam and Related Work Contract No. 420

Sealed bids or proposals for "Constructing Bridge Creek Dam and Related Work, Contract No. 420" will be received at the office of the Director of Public Service, Room 203, Municipal Building, Akron, Ohio, until twelve o'clock noon, Eastern Standard Time, on December 2, 1957, and at that time and place will be publicly opened and read.

The proposed Bridge Creek Dam will be part of the City's Cuyahoga River Water Supply System, located in Geauga County, Ohio, about twenty miles northeast of the City of Kent.

The Contract involves the construction of an earth dam which will contain approximately 385,000 cubic yards of materials, a concrete intake tower and tunnel through the dam, a concrete overflow spillway, chute and stilling basin, all requiring approximately 7,250 cubic yards of concrete, and miscellaneous items of equipment for control of the water and operation of the facility.

The Drawings, Specifications and Information and Instructions for Bidders, and the Proposal, Contract and Bond forms are on file and may be seen at the office of the Director of Public Service, Municipal Building, Akron, Ohio. Copies may be obtained at the office of the Bureau of Water Supply, Room 404, Municipal Building, Akron, Ohio, or at the office of Parsons, Brinckerhoff, Hall and Macdonald, Engineers, 51 Broadway, New York, New York, upon deposit of twenty-five dollars, which sum will be refunded upon return of the Drawings and Specifications in good condition.

All proposals must be submitted upon the blank form and in accordance with the instructions furnished by the City.

Each Proposal must be accompanied by a certified or cashier's check on a National or State bank in the sum of One Hundred Thousand Dollars ($100,000.00).

A Bond in the sum of the full amount of the Contract, with satisfactory surety, will be required for the faithful performance of the Contract.

The Director of Public Service reserves the right to reject any or all Bids, and to waive any technical defects, as the interest of the City may require.

THE CITY OF AKRON, OHIO
By: Leo G. Walter
Director of Public Service

Published: October 31 and November 7, 1957

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4986) will be received at Winters, California until 10 a.m. Pacific Standard Time December 3, 1957, for furnishing labor and materials for Putah South Canal and Green Valley Conduit and Subconduit, Solano Project, California. Location near Fairfield, California. Principal items are 363,000 cu. yds. excavation; 4,960 cu. yds. concrete in canal lining; 890 cu. yds. concrete in structures; 23,400 lin. ft. concrete pressure pipe, 12- to 78-inch; various gates, valves, and metalwork; and other work. Completion time 450 days. For particulars, address Bureau of Reclamation, P. O. Box 546, Winters, California; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4988) will be received at Anadarko, Oklahoma until 10 a.m. Central Standard Time, December 12, 1957, for furnishing labor and materials for Fort Cobb Dam, Washita Basin Project, Oklahoma. Location near Fort Cobb, Oklahoma. Principal items are 4,430,000 cu. yds. excavation; 3,488,000 cu. yds. embankment; 7,930 cu. yds. concrete; and other work. Completion time 700 days. For particulars, address Bureau of Reclamation, P. O. Box 84, Anadarko, Oklahoma; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

EMPLOYMENT OPPORTUNITIES

DISPLAYED —RATES— **UNDISPLAYED**

The advertising rate is $31.80 per inch for all advertising appearing on other than a contract basis.
An Advertising Inch is measured ⅞" vertically on a column—3 columns 30 inches to a page.
Subject to Agency Commission.

$2.10 per line, minimum 3 lines.
Position Wanted ½ of above rate.
Box Numbers—counts as 1 line.
Discount of 10% if full payment is made in advance for 4 consecutive insertions.
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Send NEW ADS to ENGINEERING NEWS-RECORD, P. O. Box 12, N. Y. 36, N. Y.

WATER POWER ENGINEER

Southwestern firm seeking competent engineer to head group engaged in investigations, economic studies and designs of hydro-electric, flood control and water supply projects. Experience in earth and concrete structures, tunnels, control work, etc. mandatory. Must be in good health, aggressive and willing to travel as required. Submit complete resume. Immediate acknowledgement.

P-6298, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

HEAVY CONSTRUCTION QUANTITY SURVEYOR

and estimator wanted by large engineering contractor. Location Chicago, no traveling. Should be preferably graduate C.E. and must have about 10 years experience in above or similar lines. Exceptional opportunity as suitable party should become Chief Estimator. Please state age, education, short experience outline and present salary.

P-6492, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

ESTIMATOR & CIVIL ENGINEERING

Experienced in Cofferdam & Form Design, Bridge, Highway and All Types of Heavy Construction. Salary Open. Send Resume and Salary Requirements.

OLE HANSEN & SONS, INC.
Box 553, Pleasantville, New Jersey

REPLIES (Box No.): Address to office nearest you
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NEW YORK: P. O. Box 12 (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

Superintendent experienced in heavy sewer & water main construction under difficult conditions, by N. Y. State Contractor. Permanent position for qualified, responsible person looking for advancement with established firm. P-6165, Engineering News-Record.

University Career for Engineers—A number of teaching posts are open at a Canadian Engineering College in the fields of Civil, Electrical and Mechanical Engineering. The academic term extends from September 15th to May 1st and summer months are free for study, research or professional practice. Teaching loads run at 6 to 9 lectures and 3 to 9 laboratory hours, with a maximum of 15 hours per week. Salaries are open, depending on qualifications. Good pension and medical plans. Prime present requirements are in the fields of hydraulics and electronics but engineers in any of the three major fields are invited to inquire. P-6229, Engineering News-Record.

Prestressed concrete design engineer. Excellent opportunity to advance with new plant being built by large company initially starting in this field. Permanent position with company benefits. Send qualifications and starting salary desired to: P-6357, Engineering News-Record.

Engineers for municipal and industrial water supply, sewerage and treatment projects. Opportunities for permanent connection with long established firm of consulting engineers in mid-west. Both E.I.T.'s and engineers considered. Full information and reference in first letter requested. P-5889, Engineering News-Record.

Heavy contractor, N. Y. State, needs man to assume charge of take off, purchasing, engineering, expediting. Requires sound background & responsible field experience in heavier water, sewer & treatment plant work. Excellent opportunity for qualified person seeking & able to advance. Reply to P. O. Box 147, Colvin Station, Syracuse, N. Y.

Wanted by expanding southern structural steel fabricator, experienced structural draftsman to assume duties of squad supervisor. State age, experience, education and salary requirement. Forward full information to P-6437, Engineering News-Record.

Resident Engineer—for inspection and supervision of construction of sewage treatment plant and intercepting sanitary sewers, for out-of-town assignment in southeastern New York State. Salary open. Address reply with resume to: O'Brien & Gere, Consulting Engineers, 400 East Genesee St., Syracuse 2, New York.

Wanted: Civil Engineer to assist Chief Engineer in designing and estimating and overseeing of building construction, mostly industrial. Northeast Constructors, Inc., 8 Church Street, Gouverneur, New York. Contact John W. Rouse, President.

Surveyor or engineer with road construction experience and drafting ability. Reply to The Collier Company, c/o W. H. Turner, Everglades, Florida.

Superintendent, Building Construction. Highly capable superintendent wanted for company operating in eastern part of West Virginia, Maryland, Southern Pennsylvania and Northern Virginia. Furnish details as to experience, references, education and when available. P-6400, Engineering News-Record.

Wanted Sales Engineer Expanding 55 year old manufacturer of metal building products, including deck, wall and floor panels, windows and doors, seeks sales-minded engineers or equivalent experience in the construction field. Man selected will be trained and sent out to do field promotional work with architects and engineers before assignment to a regional sales office. Send resume to: Personnel Director, Fenestra Inc., 2250 East Grand Blvd., Detroit 11, Michigan.

Civil Engineer—$5349-$6549. Public works and utilities engineering for progressive growing, industrial city of 70,000 population. Application and brochure of city available. Write Personnel Officer, Municipal Building, Hamilton, Ohio.

Experienced Sanitary Engineers with consultant. Openings for project engineer and designers. Permanent. Send resume. Cleveland, Ohio. P-6467, Engineering News-Record.

Structural Draftsman capable of designing simple concrete steel structures. Must be accurate. Write C. E. Baldridge, D&RGW RR, P. O. Box 5482, Denver, Colo.

Superintendent, with wide experience on cofferdams and bridge pier construction. P. O. Box 9802—Philadelphia 40, Penna.

Sales Engineer—Preferably experienced in estimating and detailing, reinforcing steel, etc. Engineering degree desirable. Established clientele—building and highway contractors Indiana and Illinois. State experience, educational background and salary requirements. Our employees know of this advertisement. P-6523, Engineering News-Record.

Accountant for large construction company now operating in Madison, Wisconsin area. Must be C.P.A., with construction cost systems, tax and auditing experience. Excellent position for man who can develop office systems and is ambitious. Legal experience would be helpful. All fringe benefits available. Send complete resume and references with application for interview. Salary open. Confidential. P-6521, Engineering News-Record.

POSITIONS VACANT

Wanted—Engineers and Draftsmen experienced in design and preparation of plans and/or inspection of sanitary sewers, sewage treatment works, water mains, water treatment plants. State age, education, experience, salary and when can report. P-6483, Engineering News-Record.

Teaching appointments available. One instruction, M.S. not required. One Asst. or Assoc. Prof. interested in Sanitary Engineering with M.S. or Ph.D. Begin Febr 1 or Sept. 1, 1958. Apply Dept of Civil Engineering, Univ. of Nebr., Lincoln, Nebraska.

EMPLOYMENT SERVICE

Engrs. Designers, Draftsmen, all fields Chem. Metallurgists, I.E.'s use our national coverage. Guilford Personnel Service, 502 American Bldg., Balto. 2, Md.

POSITIONS WANTED

Civil Engineer, 32, BS, MS (Structural), Registered, 8 years varied domestic and foreign experience in teaching and in design, construction and maintenance of highways, railroads, bridges, chemical and petroleum process plants. Desires permanent position in Southern U. S. PW-6322, Engineering News-Record.

Superintendent Const. 20 years experience, Institutional, commercial, industrial projects. Engineer. PW-6329, Engineering News-Record.

Energetic Civil Engineer seeks supervisory position, minimum $12,000 yearly. Broad experience as owner's and contractor's engineer includes road and railroad location, very large topographical surveys, highway construction, docks, pulpmills, steam plants, large airbases and defense projects up to $60,000,000. Presently completing assignment as contractor's Project Engineer on large vehicular tunnel. PW-6361, Engineering News-Record.

Carpenter Superintendent—33 married. 11 years experience on bridges, buildings, and tunnels. 1 year Engineering background. Available immediately, will travel anywhere in States. References on request. PW-6392, Engineering News-Record.

Canadian P. Eng., M. Sc.—15 years experience in structural design, bridges, buildings, hydro-electric, seeks permanent position in supervisory capacity, preferably Seattle, San Francisco. Wide experience in prestressed conc. design & constr., familiar with precast production. PW-6397, Engineering News-Record.

Structural Engineer, registered graduate, 30 years subways, waterfronts, buildings, foundations, chemicals and power plants, etc., available for responsible position. PW-6405, Engineering News-Record.

Registered Architectural Engineer, specializing structural design all types of buildings, with Architects 9 years, Industry 6 years, Consultant 5 years. Experienced designer, checker, supervisor. Desires permanent position with advancement possibilities. PW-6412, Engineering News-Record.

Reg. P. E., married, BCE, MSCE, grad work in hydro, struct, and geol. Varried experience in construction, design, inspection and client relations. Desires work with consultant, with opportunities, will consider others. PW-6416, Engineering News-Record.

Chief Electrical Engineer—P. E.—Completing foreign contract—Available soon—Wide experience design & construction power plants, air bases, industrials, refineries, POL & AE—Multilingual—Foreign only on single or family status. PW-6417, Engineering News-Record.

Supt., Project Mgr. Combination available immediately for all types of construction. Experienced, Florida & West Indies. P. O. Box 3771, Sarasota, Fla. RI. 79843.

Construction Executive: Age 41. Nineteen years experience. All phases industrial, commercial, and institutional construction. Bids to completion, contract negotiation, supervision, job cost accounting and financing analysis. Desire permanent connection with young, growing, well financed organization with possible future participation. Minimum $15,000. Available November 1957. References. PW-6440, Engineering News-Record.

(Continued on page 95

STRUCTURAL
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DESIGNERS
DRAFTSMEN

Prefer several years or more experience in any of these fields:

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BUILDINGS
EXPRESSWAYS
HYDRO PROJECTS
TEST FACILITIES*

Will consider lesser experience with good educational background, including several recent graduates to round out a planned expansion program. Occasional openings for combination field men. These are permanent additions to our regular staffs.

We are professional engineers engaged primarily in design which covers a wide scope of practice. The variety and unusual character—for example, the proposed world's largest bridge project—offer excellent opportunity for professional development and advancement.

Immediate openings in our St. Louis general offices and occasionally in our San Francisco branch office. Confidential interviews can also be obtained at Washington, D.C., and Portland, Oregon.

Paid vacation, sick leave, holiday, overtime. Excellent Employee Benefits Plan provides retirement income plus life and disability insurance. Blue Cross. Moving allowance.

Please write fully, including salary data, to

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*We are designers of the technical facilities for the Arnold Engineering Development Center, operated by our subsidiary, ARO, Inc.

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Ebasco Services Incorporated, one of the most highly respected names in the utility power field, is interested in making several additions to its regular staff. To the successful applicant, these positions offer ample opportunity for professional growth and personal achievement, limited only by his own ability.

PROJECT ENGINEER

Graduate M.E. with a minimum of 5 years experience in the design engineering of steam electric stations covering all phases of mechanical power plant work. These positions require men who have had supervisory responsibility in engineering design, specification preparation, procurement of equipment, etc.

ENGINEERS

Graduate M.E. with some recent experience in the design engineering or construction of steam electric stations.

We invite you to investigate these opportunities by forwarding a complete, confidential resume to:

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EBASCO
SERVICES INCORPORATED
Ebasco Building
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To prepare process flow diagrams and equipment specifications for raw materials handling and iron and steel production facilities.

Some engineering experience required, preferably in a metallurgical industry. Operating experience desirable. Engineering degree required.

WRITE TO OR CALL
G. VICTOR HOPKINS

ARTHUR G. McKEE & CO.
2300 Chester Ave., Cleveland 1, Ohio
Telephone TO-1-2300

WATER and SEWER ENGINEERS

(Civil Service Classification—
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SALARY RANGE
$509 to $629 Per Mo.

Job Requirements: **Design of water supply, distribution, treatment and pumping facilities, sanitary sewers, sewage pumping and sewage treatment.**

Education and Experience Requirements: **B.S. in Civil or Sanitary Engineering and five (5) years experience in above special fields—or—the equivalent combination of related education and experience in lieu of a degree.**

Additional data will be sent to all applicants.

Send complete summary of your education and experience to: Mr. C. F. Wertz, Director, Dept. of Water and Sewers, P. O. Box 316, Miami 33, Florida.

CHIEF, DIVISION OF GENERAL PUBLIC WORKS OPERATIONS: Graduate Civil Engineer, age 30-50, for responsible, professional and administrative work involving street maintenance, building and grounds maintenance, garbage collection, etc.

DESIGN ENGINEERS: Graduate Civil Engineer to do detailed design work involving street paving, storm sewer and sanitary sewer projects. Must be capable of supervising subordinates involved in such activities.

Application should be made, giving minimum salary, to Department of Personnel, Springfield, Missouri.

CONSTR. SUPT.

American mining corporation in Jamaica doubling its capacity requires capable, young civil engineer to supervise construction of small buildings, roads, tramways, and installation of equipment. Prefer previous foreign engineering and supervisory experience and interest in indefinite stay. Write immediately giving age, education, and experience.

P-6496, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

Graduate Civil Engineer

Excellent opportunities with nationally recognized organization engaged in engineering service work in highway and concrete fields. Location southern Illinois and covering surrounding areas. Permanent position. Salary based on qualifications and experience. Car allowance and expenses. Excellent benefits and retirement program.

P-6365, Engineering News-Record
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Office and field work in California's dynamic highway program.

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Design and field work in California's multimillion dollar bridge program.

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Engineering control of water supply and waste disposal, air pollution and industrial hygiene.

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Junior positions—no experience

$481 to $530 a month

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Positions open at these levels only.
U. S. citizenship required.

Send resume to: C. S. Warner, Supervisor, Section E, 801 Capitol Ave., Sacramento 14, Calif.

Highway Engineers - Designers & Draftsmen
Bridge Engineers - Designers & Draftsmen
Architectural - Designers & Draftsmen

Permanent employment for qualified men. Ample opportunity for advancement based on merit; plus excellent retirement program, group life insurance, hospitalization, paid vacations and holidays. Salary commensurate with experience.
Architectural openings in Rochester, Pa. Highway & Bridge openings in Pennsylvania, Maryland, Mississippi, Ohio & West Virginia.

Air Mail Resume To: R. L. SHAW, *Personnel Director*

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EXPERIENCED EARTH MOVING EQUIPMENT SERVICE MANAGER.
UNDER 38 YEARS OF AGE.
MUST BE ABLE TO HANDLE SERVICE MANAGEMENT PROBLEMS OF LARGE SCALE OPERATION.
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P-6083 Engineering News-Record, 1125 W. 6th St., Los Angeles, Calif.

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BRIDGES
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Please submit complete resume giving education, experience, salary desired, and date of availability.

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Assist. Electronics Programming Engineer

In Newly Established
IBM 650 Computer Division
Florida State Road Department

Required—B. S. in Civil Engineering with three years of highway experience—preferably in highway design. We will send you to two-weeks computer programming school.

Merit System Rating: Civil Engineer II

Starting Salary: $525 per month

Opportunity: In this new & expanding field of electronics, you will be developing computer programs for problems in all areas of highway engineering.

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Broad diversification of work in our 3 engineering divisions assures you security of employment.

Send detailed resume to
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CONSTRUCTION ENGINEERS

Foreign Employment

Career opportunity for graduate chemical and mechanical engineers for construction work in Saudi Arabia. Degree essential. Minimum 10 years experience supervising construction of oil processing and oil handling facilities. To supervise actual construction by contract or service organization personnel involving control over construction methods, scheduling, expediting and progress; utilization of men and materials; and the inspection of workmanship for compliance with plans and specifications.

Salary commensurate with experience plus living allowance and generous all-inclusive benefits. Excellent community facilities.

Write outlining background and experience. Please include your telephone number.

Recruiting Supervisor, Box 214

ARABIAN AMERICAN OIL COMPANY
505 PARK AVENUE
NEW YORK 22, NEW YORK

CIVIL ENGINEERS

Civil Engineers with experience in hydraulics, concrete, soils or specifications for design hydraulic structures in Harrisburg, Pennsylvania. Graduate Civil Engineers also required for Chief, Construction Branch and Resident Engineers on Dam Construction. Salary open. State experience, salary requirements and references.

P-6428, Engineering News-Record
Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

Mechanical Draftsmen

Permanent positions with good future for alert, quick-thinking draftsmen who have a minimum of three years drawing board experience in piping; processing and production equipment; or light, high-speed package machinery. Some college engineering training desirable. Excellent benefit program, modern facilities. Chicago location. Include age, marital status, education, and experience in your letter of application.

P-6497, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

POSITIONS WANTED
(Continued from page 92)

Struct. Design, 20 yrs. exp., wish overseas job. Will also accept field job. PW-6416, Engineering News-Record.

Project Manager or Superintendent, 29 years ex., no fancy education but have and can handle large road and airfield jobs preferable earth. Can supply a good line or followers. Available now. PW-6427, Engineering News-Record.

General Supt. or Project Manager 25 yrs. experience: Industrial, commercial and Institutional construction. PW-6430, Engineering News-Record.

Struct. engineer, BS in CE, RPE, age 36, experienced in design and coordination of school, industrial and institutional buildings. Background in sanitary and municipal work. Desire to associate with small to medium-sized consultant or architect with possible future partnership. Present income over $8500. PW-6458, Engineering News-Record.

Construction Engineer, Civil graduate with over 9 years diversified construction experience, 7 years overseas. Spanish speaking, single, age 30, veteran. Desires foreign assignment in construction or administration. Available immediately. PW-6522, Engineering News-Record.

BCE 1950 Registered. Experience in high-ways, surveying, municipal construction, and sales. Seek job with contractor, engineer or sales. PW-6527, Engineering News-Record.

Project Manager or Superintendent—Twenty years experience in heavy construction. Prefer South, West or Overseas. Available immediately. PW-6524, Engineering News-Record.

Chief Draftsman with structural fabricating plant experience, desires similar or chief engineer position with established fabricating company, heavy & light structural experience. PW-6469, Engineering News-Record.

Structural Designer with 30 years rounded, experience and some field—will prepare complete plan and liaison, or serve as employee with consultant, architect or contractor. Development work or investigation on full or part time. PW-6465, Engineering News-Record.

Project Engineer, 33 MSCE, Registered P.E., 11 yrs. experience in water supply, sewage disposal and drainage facilities investigation, design and construction, U. S. and overseas. Know Spanish. Desires permanent position with firm doing both U. S. and foreign work. PW-6472, Engineering News-Record.

Project Manager or General Superintendent. Age 41. 19 years experience in heavy construction domestic and foreign. From estimating to completion. Highways Airfields Pipelines Disposal-plants. Prefer southeastern states—would consider other. Presently employed. Available Oct. 21. PW-6487, Engineering News-Record.

Architectural, Structural Civil: Designer-Draftsman, Specifications writer, Inspector, Cost Estimator; also law work; single; go anywhere in world; fluent Spanish, others; experience on board and field since 1942; young. Albert H. Payne, 3909 Fargo Way, North Wighlands (Sacramento), California.

Construction Manager with long record as profit producer desires connection with western General Contracting Firm. Expert Estimating, Supervising, job planning. Archt. & Owners relations. PW-6517, Engineering News-Record.

Civil Engineer, MSCE, 26, EIT N. Y., 5 years experience in Research, Field Construction, and Administration; seeks career employment in Construction Planning Reports, Studies. Prefer East Coast. PW-6516, Engineering News-Record.

Superintendent or general manager, 25 years experience heavy construction; highway grading and drainage, bridges, earthen dams, flood control projects; thorough knowledge estimating, bidding, cost, equipment, subcontracts, budget and finance. Location immaterial. PW-6533, Engineering News-Record.

Project Manager or General Superintendent 12 yrs. supervisory exp. ind., comm. and res. const. Eng. background, B.A. deg. will relocate Southwest and Calif. Excellent ref. PW-6534, Engineering News-Record.

Soils Engineer, MS Harvard '49. Experienced in design of foundations, docks, bulkheads, retaining walls & highways. PW-6477, Engineering News-Record.

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CONSTRUCTION CONSULTANTS
P.O. Box 921 Lake Worth, Florida

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NEW YORK: P. O. Box 12 (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

SPECIAL SERVICES

Steel and reinforced concrete detailing highway spans buildings for architects engineers fabricators. SS-6038, Engineering News-Record.

Surveyors: Alexander Milyko, Prof. Engineer & Land Surveyor, surveying field parties available.—Contract or Per Diem basis. Willing to travel to any location. Prefer preliminary highway & aerial topography surveys. Huntington Sta., 1124, New York Ave., L. I., N. Y.

Small Competent Engineering Organization. Desires design and preparation of plans for Highways or Railroads Bridge. P. O. Box 243, L. I. C. 1, N. Y.

Scale Models for Architects & Engineers. Sales promotion & display: Engineering Models, R.D. 1.—Box 463-B, Harrisburg, Pa.

Accurate quantity take-off and estimates. Complete cost analysis and unit cost procedure on Pub. Wks., commercial and Industrial Installation. SS-6535, Engineering News-Record.

WORK WANTED

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CLASSIFIED ADVERTISING INDEX

EMPLOYMENT OPPORTUNITIES ADVERTISERS

Arabian American Oil Co. 94
Baker Jr., Inc., Michael 94
Booker & Associates, R. W. 94
Ebasco Services Inc. 93
Florida State Road Dept. 94
Hansen & Sons Inc., Ole 92
Miami Dept. of Water & Sewers 93
McKee & Co., Arthur G. 93, 94
Springfield Mo., City of 93
Sverdrup & Parcel Inc. 93
Warner, C. S. 94

SEARCHLIGHT SECTION ADVERTISERS

Air Compressor Rental Co. 95
Albert Pipe & Supply Co. 97
Alexander & Repass 96
Ambursen Dam Co., Inc. 97
Buff 95
Coast Dredging Corp. 95
Coleman Cable & Wire Co. 96
Contractor's Machinery Co. 97
Deatherage & Son, Geo. E. 95
Drachman Steel Corp. 96
Dyer Co., Inc., W. H. 96
Foster Co., L. B. 97
Forsythe Equipment Co., Inc. 96, 97
Gillis & Co. 96
Greenpoint Iron & Pipe Co. 97
Greensburg Machine Co. 96
Hickerson Instrument Co. 95
Hodge & Hammond Inc. 96
Judge & Co., Inc., Frank 96
Mack Trucks Inc. 97
Memphis Equipment Co. 96
Midwest Steel Corp. 96
Mississippi Valley Equipment Co. 97
Seaboard Steel Corp. 97
Sherman Crane Service Inc., Roger 97
Smith Inc., H. Y. 96
Smith Inc., L. B. 97
Spearin, Preston & Burrows Inc. 97
Stanhope Inc., R. C. 97
State Equipment Co. 96
Walsh-Perrini-Morrison-Kiewit-Utah Companies 97
Warren-Knight Co. 95
Western Services Corp. 97
Whisler Equipment Co. 96
Wilson Engineering Corp. 95

ADVERTISERS IN THIS ISSUE

American Cable Div, American Chain & Cable Co. 86
Armco Drainage & Metal Prod. 66-67

Belmont Iron Works 60
Bethlehem Steel Co. 46
Chas. Bruning Co., Inc. (insert) 49-52
Bucyrus Erie Co. 29
Byers Co, A M 57

Clipper Mfg. Co. 15

Dudgeon Inc, Richard 48

Enjay Co, Inc. 83
Esso Std Oil Co. 13
Eastman Kodak Co. 61

Fenestra Inc. 38-39

Gary Grating Div, Rockwell Spring & Axle Co. 48
General Textile Mills, Inc 77
Goodyear Tire & Rubber Co, Inc. 7
Greenlee Tool Co. 47
Griffin Wellpoint Corp. 72
Gunite Concrete & Construction Co. 60

Irving Subway Grating Co. 62

Jersey Bolt & Spike Corp. 72
Jones & Laughlin Steel Corp. 10

Kern Instrument Co. 60

Lone Star Cement Corp. 20

Master Builders Co. ..... 3rd Cover
Mayo Tunnel & Mine Equip. Co. 60
McConnaughay, K E 14
McGraw-Hill Book Co. 99
McKiernan Terry Corp. 71
Murphy Diesel Co. 1

National Steel Corp., Stran Steel Div. 55
National Supply Co. 12
Northwest Engr. Co. 3
Noble Co. 30-31

Pennsylvania Drilling Co. 48
Phoenix Bridge Corp. 72
Portland Cement Corp. 68

Raymond Concrete Pile Co. 18
H. H. Robertson Co. 45
Roebling Sons Corp, John A. 85
Russell Burdsall & Ward Bolt & Nut Co. 63
Ryerson & Son, Inc., Jos. T. 16

Sachse Elec. 99
S Morgan Smith Co. 35
Standard Dry Wall Prod. 8
Standard Steel Corp. ..... 2nd Cover
Stang Corp., John W. 37
Steelcraft Mfg. Co. 73
Superior Concrete Accessories 6
Symons Clamp & Mfg. Co. 2

Texas Co. 4, 5
Timken Roller Bearing Co. ..... 4th Cover
Travelers Ins. Co. 9

Waukesha Motors Co. 11
Westinghouse Elect. Corp. 70, 71
Wheeling Corrugating Co. 75
Williams Equip & Supply Corp. 48

Professional Services 98

CLASSIFIED ADVERTISING

F. J. Eberle, Business Mgr.

Employment Opportunities 92-95
Educational 95
Notices
Proposal 89-91
Equipment
(Used or Surplus New)
For Rent, Sales Wanted 95-97
Advertisers' Index 98

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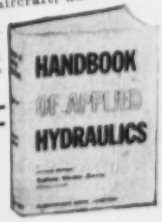

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The Queen's Good Advice

Queen Elizabeth II, who charmed millions of Americans into a happier state of mind last week, also fitted into her busy schedule a speech to the Washington press corps. If it was a sample of the Queen's usual speeches her recent British critics need medical attention. For it was gracious, discerning, topical and thought-provoking. Focused as it was on the complex times in which we live, the speech, in one portion, emphasized an editorial objective to which we heartily subscribe, and which we commend to the thoughtful attention of our readers.

Said the Queen, in speaking to the press, "Technical progress and the rapidly changing pattern of modern life increase the difficulties and responsibilities of your task. . . . Moreover, your readers, as their interests widen, demand more background to the news about more intricate subjects. They themselves, as responsible citizens in a modern democracy, are called upon to make more and more decisions about more and more complex issues. To a large extent it is upon you that they must depend for material they use in debating those issues."

This statement of the Queen translates directly into the informational needs of civil engineers and construction men, as we see them. They, too, have wider interests than ever before. They, too, must make more and more decisions on more complex subjects. And since they are responsible citizens, these must be wise decisions based upon "more background to the news about more intricate subjects." As editors, it is our duty to supply this background information while it is the readers' duty to sift and use it wisely. In pointing this out so lucidly, the Queen demonstrated a sagacity to match her charm.

ASCE's Self-Analysis

Real promise of professional advancement may be seen in the way the American Society of Civil Engineers permitted itself to be analyzed and criticized at its annual meeting in New York (ENR Oct. 24, p. 21).

Most of the noteworthy revelations—of apathy among many members and discontent among others—came from a research study that had been primarily seeking guidance on improving the professional education of future civil engineers. But fortunately, the researchers also asked several non-educational questions to determine attitudes of members on what the Society should be doing for their professional and economic betterment.

Findings of the researchers indicate that two out of three members wish the ASCE to be more active in the area it defines as its Department of Conditions of Practice. Recognizing this wish, task committees on education and economic advancement objectives made many recommendations that could have an early uplifting effect on the civil engineering profession: increased interest in salary studies, promotion of adequate salaries for engineering teachers, greater attention to the problems of the construction industry, intensified efforts in public relations, more aggressive recruiting of students into civil engineering and greater participation by individual members and local sections of ASCE in community affairs.

In the report of the education committee, which made most of these recommendations, there is also this significant statement, "It must be borne in mind that the primary objective of the Society . . . is the development of professional ability and ethical attitude of its members." This fact—that it is the technical competence of the civil engineer and the contributions to the public welfare that stem therefrom which give him standing and influence—should never be forgotten. The right to demand better economic conditions for engineers rests squarely on the ability of engineers to provide the very best in competent technical service.

Nevertheless, once this requirement is satisfied, the Society's responsibility for promoting the social and economic status of its members is clearcut. And it may be confidently expected that the Society's Board of Direction will do everything possible to carry out the wishes of the members for increased activity in this field, in which over the past half dozen years it has already made quite substantial advances. In the meantime, the members who voted for more such activity in the recent poll should not forget that they thereby pledged themselves individually and on the local section level to work for these same objectives. If the civil engineers' influence and standing are indeed in need of bolstering, it is everyone's job to lend a hand.

Business as Usual

It is significant to note that while Turkey is supposed to be getting ready to invade Syria, her interest in playing the belligerent role that the Syrians—and the Russians—have assigned her has been noticeably less than her interest in election campaigning, which was clinched in the national voting of last week. Moreover, she actually had the effrontery last week so to forget her war-making responsibilities as to sign an agreement with the French to help her build a great new bridge across the Bosporus at Istanbul.

Announcing this event (prophesied in our Oct. 10 article on Turkey) just at this time shows quite clearly that the Turks are not so concerned with the troubles of the Middle East as to overlook such a classical election device. It could also indicate a Turkish appraisal of the future as a peaceful enough period in which to complete a major bridge.

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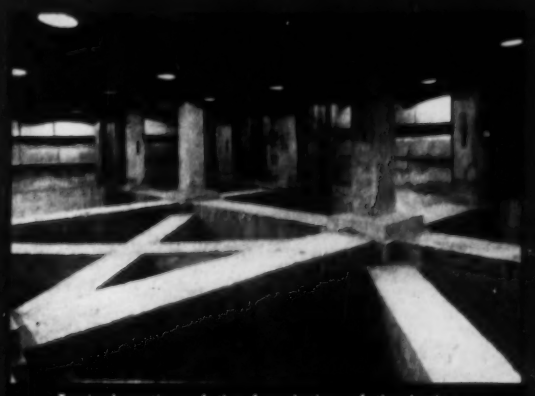

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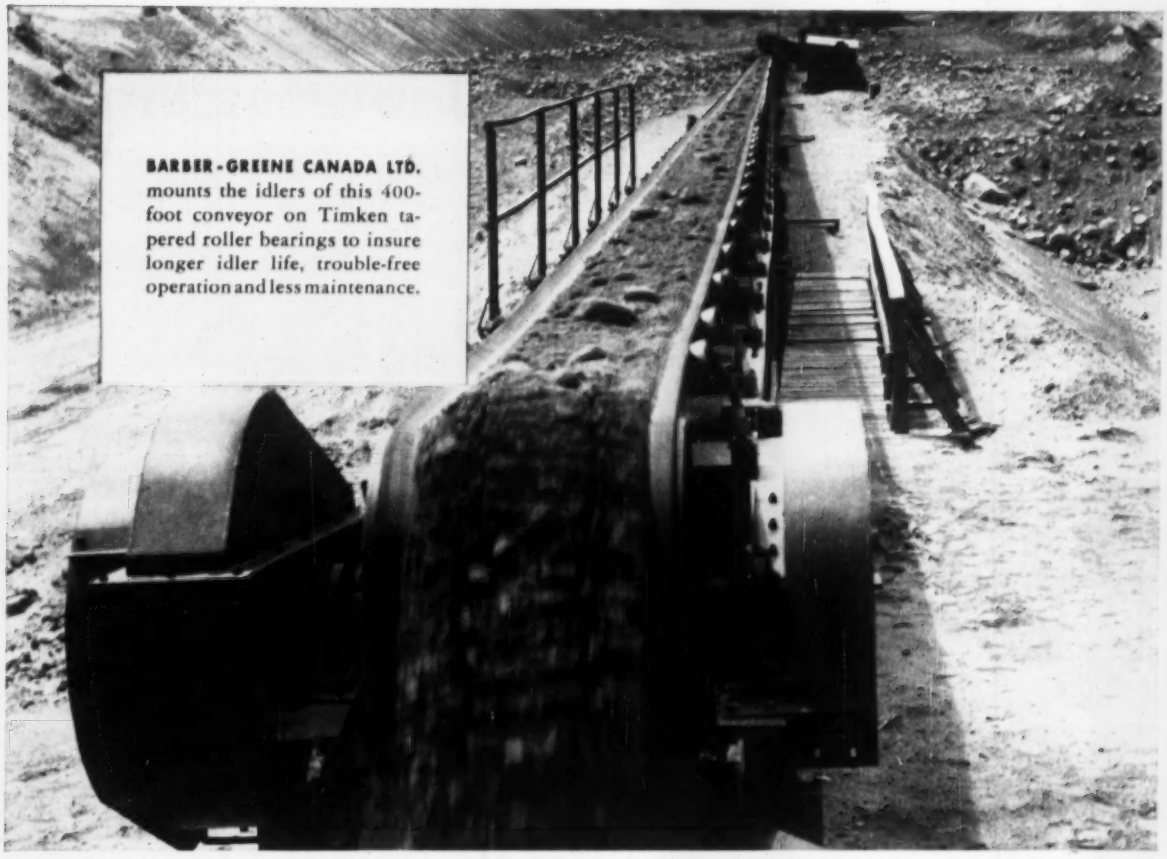
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